Thyroid Hormone Induces DNA Demethylation in Developing Tadpole Brain

by

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DEDICATION

To my family.

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ABSTRACT

Thyroid hormone (T_3) plays important roles in vertebrate brain development. The actions of T_3 are mediated by transcriptional regulation through the T_3 receptors (TR) that serve as epigenetic switches to modify chromatin structure. The role of T_3 in histone modifications is well studied, but virtually nothing is known about a potential role for T_3 in modulating DNA methylation, which together with histone modifications alters chromatin structure and gene transcription. Methylation of DNA is a key epigenetic modification regulating gene transcription typically leading to repression; while, DNA demethylation favors activation. I used *Xenopus* tadpole metamorphosis, a T_3 - dependent postembryonic developmental process, to investigate a possible role for T_3 in the regulation of DNA methylation in brain development of a vertebrate.

I investigated developmental and T_3-dependent changes in mRNA levels of genes that code for DNA demethylation enzymes (*tet2, tet3, idh1/2/3, gadd45α/β/γ and tdg*) in the diencephalon of *X. tropicalis* brain. I found that the mRNAs for each of these genes increased during metamorphosis and reached a maximum at metamorphic climax, and that *tet2* and *gadd45γ* are direct T_3 target genes. Using immunohistochemistry, I investigated the changes in distribution of ten eleven translocase 3 (TET3), a methylated DNA-binding dioxygenase that catalyzes conversion of 5 methylcytosine (5-mC) to 5 hydroxymethylcytosine (5-hmC), and the active DNA demethylation intermediates 5-hmC and 5 carboxy methylcytosine (5-caC) immunoreactivity (ir). I found that the TET3, 5-hmC and 5-caC ir increased around the

thalamic nuclei and ventral hypothalamus of the tadpole brain, known to be highly responsive to actions of T_3 during metamorphosis and reached a maximum at metamorphic climax; TET3, 5-hmC and 5-caC ir could also be induced by treating premetamorphic tadpoles with exogenous T_3.

I used three independent assays to study locus specific changes in DNA methylation at T_3 response elements (TREs) of the known T_3-regulated gene, DNA methyltransferase 3a (*dnmt3a*). Using bisulfite sequencing, I discovered that one of the TREs within *dnmt3a* (TRE-A) underwent DNA demethylation during spontaneous metamorphosis. Using immunoprecipitation for 5-hmC, I found that treatment of premetamorphic tadpoles with T_3 increased 5-hmC around the *dnmt3a* TRE-A in the genome of tadpole neural cells and that T_3 treatment increased recruitment to chromatin of TET3 around *dnmt3a* TRE-A evidenced by chromatin immunoprecipitation assay. I also found that TET3 was recruited, to chromatin at regions of TREs of the T_3 target genes *trb, th/bzip, klf9* and *gadd45γ*.

Taken together, my findings support that T_3 induces DNA demethylation in the *X. tropicalis* tadpole brain and this is mediated in part, by direct T_3-mediated regulation of DNA demethylation genes, particularly *tet2* and *gadd45γ* and also by direct T_3-induced DNA demethylation at TREs of known T_3 response genes catalyzed by T_3-dependent active recruitment of TET3. To my knowledge, this is the first study to identify a role for T_3 in modulating DNA methylation in the developing brain of a vertebrate and identifying a clear positive correlation between T_3, mRNA levels of DNA demethylation genes and DNA demethylation intermediates. It is also the first study to suggest that T_3 could

induce locus specific DNA demethylation through recruitment of TET3 to the sites of DNA demethylation.

CHAPTER 1

INTRODUCTION

Thyroid hormone (T_3) is a powerful signaling molecule with important and ancient roles in animal development, particularly development of the brain. In the mammalian brain, T_3 is essential for development of Purkinje cells, dendrite formation, neuronal migration, myelination and adult neurogenesis. Thyroid hormone mediates these changes via regulation of gene transcription by binding to specific T_3 receptors and in turn inducing chromatin remodeling and post-translational modifications of histones. DNA methylation is a key epigenetic modification that regulates gene transcription and is crucial for development of the brain. The role of DNA methylation and the significance of T_3 in proper development and functioning of the brain have been studied intensively as separate mechanisms, but virtually nothing is known about the interplay between these two key processes. My work has focused on investigating T_3-dependent changes in DNA methylation in the developing vertebrate brain.

DNA methylation

All somatic cells of an organism have the same genetic information encoded in their DNA. However, different cell types express different sets of genes, which accounts for their different phenotypes. One type of cell may express different genes at different stages of its life history. This complex mechanism of gene regulation is developmental

stage and cell type-specific. In addition, the eukaryotic genome is marked with a layer of epigenetic information that modulates changes in gene transcription. Methylation of DNA is one such epigenetic modification that is characterized by the covalent addition of a methyl group to the fifth carbon ring of the cytosine (5-mC) and is a conserved mechanism found in most plant and animal systems [1–4].

Methylation of DNA was first observed in the mammalian genome as a modification in the cytosine base by Hotchkiss and colleagues in the late 1940s[5]. Despite knowledge of the presence of this modification to cytosine, its functional significance was largely unknown until 1975 when Holliday and colleagues[6] proposed DNA methylation as a possible mechanism for gene regulation during development. Throughout the 1980s, many groups provided additional evidence in support of the role of DNA methylation in regulating gene transcription, mostly in mammals. One of the notable examples was reported by Jones and colleagues[7], where undifferentiated mouse embryonic cells were treated with 5-azacytidine (5aza), which is a DNA methyltransferase inhibitor. They reported that treatment with 5aza resulted in the undifferentiated cells forming several differentiated cell phenotypes, including muscle and fat cells[7]. Today, DNA methylation is an extensively studied epigenetic modification that plays significant roles in development, genomic imprinting, and maintaining genome stability[8,9].

Family of DNA methyltransferases

Methylation of DNA is carried out by a family of DNA methyltransferases (DNMTs) that transfer a methyl group from the universal methyl donor, *S*-adenosyl-L-methionine (SAM), to the 5-position of cytosine residues in DNA. In mammals, four

members of the DNMT family have been discovered: DNMT1, DNMT3A, DNMT3B and DNMT3L. While DNMT1, 3A and 3B are have enzymatic activity, DNMT3L lacks the catalytic domain required for DNA methyltransferase activity[10]. Among the three enzymatically active DNMTs, DNMT1 functions as the major maintenance methyltransferase. Maintenance of DNA methylation is a DNA replication-dependent process that is responsible for copying the methylation pattern of the parent DNA strand onto the newly replicated daughter DNA strand[11,12]. DNMT1 specifically recognizes sites of hemi-methylated DNA created during replication and copies patterns of methylation onto the daughter strand [13,14]. The absence of DNMT1 causes global hypomethylation and the failure to maintain methylation imprints, resulting in early embryonic lethality in mice[15,16].

The other two DNMTs (DNMT3a and DNMT3b) function independently of DNA replication by establishing new methylation patterns to unmodified DNA and are hence known as *de novo* methyltransferases. Both DNMT3a and DNMT3b show high sequence similarity but possess distinct target specificities and expression patterns[17,18]. DNMT3B is highly expressed and crucial during early embryonic stages, while DNMT3A is highly expressed in later embryonic stages and in differentiated cells. Homozygous mutations in *Dnmt3b* in mice lead to lethality during gestation[19], and mice lacking *Dnmt3a* die at about one month postnatally[17,20]. However, the combined knockout of *Dnmt3a* and *Dnmt3b*, leads to embryonic lethality resulting from impaired gastrulation, suggesting that both enzymes maybe crucial for early development[19].

Patterns and roles of DNA methylation

DNA methylation is typically associated with transcriptional repression of the associated genes, although DNA methylation-dependent transcriptional regulation may be dependent on the location of methylation with respect to the gene. In the recent years, many techniques have emerged to analyze methylation data on a genome-wide scale, like methyl-cytosine DNA immunoprecipitation (meDIP), bisulfite sequencing and methyl capture sequencing (MethylCap-Seq). Global analyses of the mammalian methylome indicate that 5-mC is present predominantly in the CG dinucleotide context throughout the genome, including in promoters, intergenic regions, gene bodies and transposable elements[21].

These studies have discovered an inverse correlation between cytosine methylation and CG density. About 70% of the mammalian genome is CG-poor and shows high levels of cytosine methylation. The remaining unmethylated CG dinucleotides mostly occur in stretches of ~ 500-2000 bp regions of DNA that have a high CG density and are termed CpG islands (CGI)[22,23]. Most CGIs are found in gene promoters (an estimated 70%) in the vertebrate genome [24,25]. Interestingly, there is emerging evidence of methylation in a non-CG context reported in mouse and human embryonic stem cells (CT and CA methylation), but the functional significance of this non CG methylation is still unclear[26,27]. Although a large body of experimental evidence suggests that DNA methylation occurring in promoter and enhancer regions suppresses gene activity, some DNA methylation that occurs in the gene body is associated with gene activation. The mechanism and functional relevance of this modification is still poorly understood[28,29,10].

Transcriptional repression mediated by DNA methylation is explained by two possible mechanisms: 1) methylation of DNA physically inhibits the binding of transcription factors to DNA, thereby preventing activation of the target gene[30,31] and 2) methylated DNA (in the CG dinucleotide context) facilitates recruitment of methyl-CpG binding proteins (MBDs) which in turn recruit different chromatin modifiers such as histone deacetylases (HDAC) to establish a repressive chromatin environment[32,33,34,35]

Role for DNA methylation in the developing brain

The precise regulation of DNA methylation is critical for the development, differentiation and maturation of the central nervous system in mammals. For example, Lister et al[36] reported that during synaptogenesis, the mouse cerebral cortex undergoes large-scale reconfiguration of methylome, and Luo et al. reported that DNA methylation patterns are predictive of conserved regulatory elements and neuron types in the mouse and human cortex[37].

Unlike most other tissues, where the abundance of DNMTs decreases in differentiated cells, *Dnmt1* and *Dnmt3a* are expressed in post-mitotic neurons in the mammalian brain. However, the expression of *Dnmt3b,* is very low in differentiated neural cells[38,39,40,41]. Embryonic mice with conditional knockout of *Dnmt1* at a period coinciding with neurogenesis exhibit hypomethylation of differentiating neurons, resulting in defects in dendritic arborization and impaired neuronal excitability[42,43,44]. One of the MBD proteins, MeCP2, is required for neuronal maturation, loss of which results in impaired dendritic arborization and synaptic function[45–49] . Additionally, mutation in MeCP2 results in Rett Syndrome, a common form of mental retardation in

females[50]. These findings collectively suggest a significant role for DNA methylation in post-mitotic neurons of in the developing brain.

DNA demethylation

Although DNA methylation is a heritable and stable epigenetic mark, methylation of cytosine can be reversed. The process of DNA demethylation can be active or passive. Passive DNA demethylation occurs when the methyl group is lost during successive rounds of DNA replication in the absence of functional DNA methylation maintenance machinery. An example of replication-dependent passive demethylation is the global erasure of 5-mC in the maternal genome during mouse embryonic development (discussed later). In contrast, active DNA demethylation is a process that removes methyl group from 5-mC through a series of enzymatic reactions.

Earlier hypotheses about the mechanism of active DNA demethylation involved excision of 5-mC and replacement with unmodified cytosine through DNA glycosylases and DNA repair enzymes. A major breakthrough in the field came in 2009, when two papers showed that a family of enzymes, the Ten Eleven Translocases (TET), can oxidize 5-mC to 5 hydroxymethylcytosine (5-hmC), a key intermediate in the active demethylation pathway[51,52]. They reported that overexpression of human TET1 caused a reduction in genomic 5-mC, and that TET1 was capable of converting 5-mC to 5-hmC in mammalian systems. Subsequent studies have reported that the other two TET proteins, TET2 and TET3, can also oxidize 5-mC to 5-hmC and that all three proteins of the TET family can further oxidize 5-hmC to 5-formylcytosine (5-fC) and 5-carboxycytosine (5-caC)[53–56].

Of all the 5-mC oxidative intermediates, 5-hmC is deemed most stable, highly enriched in parallel to expression of TET enzymes in the mammalian genome, especially the brain[51,57]. Genome-wide studies mapping 5-hmC enrichment in the mouse brain have shown an abundance of 5-hmC enrichment throughout the genome, including proximal regulatory regions present up and downstream relative to gene Transcription Start Sites (TSS) and in intragenic regions (gene bodies). Enrichment of 5-hmC in the proximity of genes is associated with highly expressing genes, especially genes activated during development. There is now increasing evidence that 5-hmC is a stable epigenetic mark with distinct functions, and not just an intermediate in the active DNA demethylation pathway[58,59,60–62].

The oxidized 5-mC intermediates (5-hmC/5-fC/5-caC) are then replaced by an unmodified cytosine completing the process of methyl group removal. Several mechanisms have been proposed to explain the removal of DNA demethylation intermediates:

1) ***Passive dilution of the oxidized cytosine base:***

Oxidation of 5-mC mediated by TET enzymes generate modified cytosine bases (5-hmC/5-fC/5-caC). Similar to passive DNA demethylation, establishment of DNA methylation might be lost in a replication-dependent manner. Some *in vitro* studies have reported that DNMT1 recognizes 5-hmC poorly, hence failing to replicate methylation on the daughter resulting in passive DNA demethylation [63,64]

2) DNA repair (Base/nuclear excision)-mediated excision of oxidized 5-mC: Active Modified-Active Repair (AM-AR) pathway:

After TET-mediated oxidation of 5-mC to 5-hmC, 5-fC or 5-caC, the modified bases are excised by the base excision repair (BER) or nuclear excision repair (NER) mechanism. One of the major enzymes in the BER pathway is thymine DNA glycosylase (TDG) reported to excise oxidized 5-mC bases resulting in abasic sites that are replaced by an unmodified cytosine. Some groups have reported deamination of modified 5-mC and NER pathways mediated by other enzymes including the AID/APOBEC deaminases, and the growth arrest and DNA-damage-inducible 45 (GADD45) proteins as an alternative glycosylase mediated excision of modified mC[65–67]. However, excision of 5-fC/5-caC by actions of TDG is the most empirically supported mechanism for the TET-dependent active repair demethylation mechanism[68,55,56].

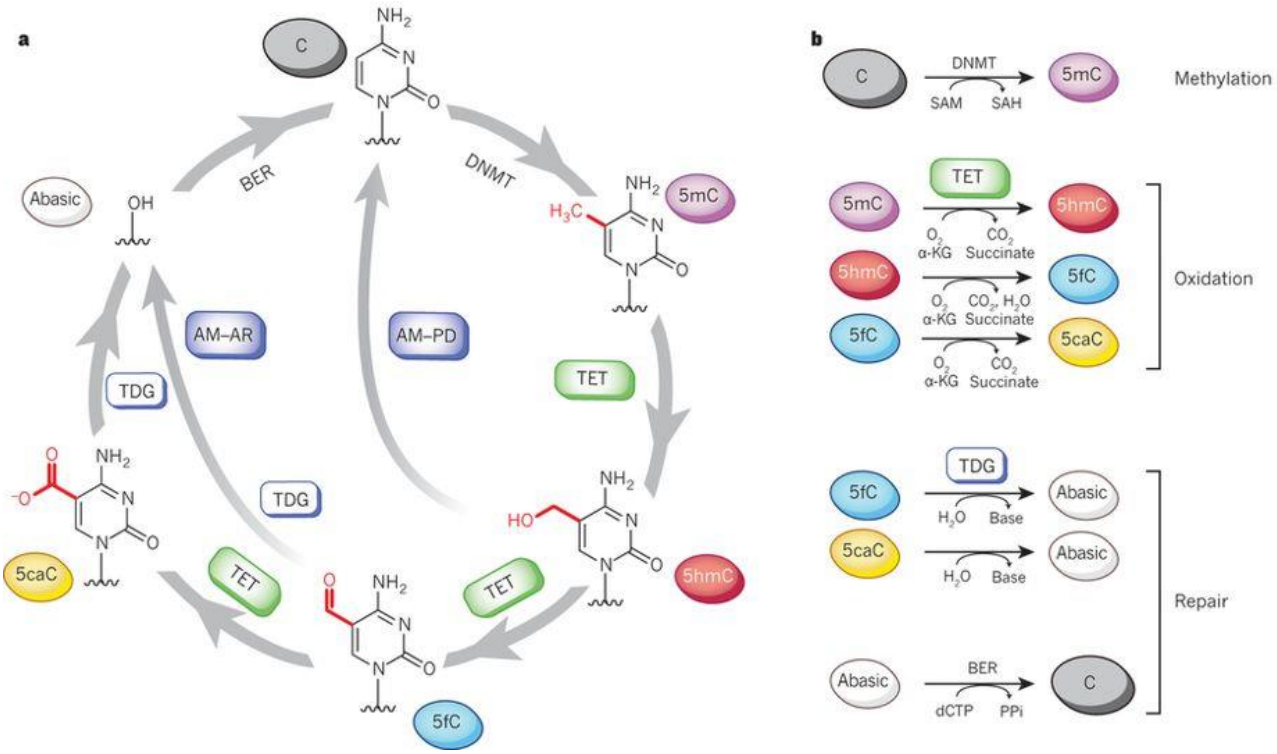

Figure 1.1. Schematic representation of the active DNA demethylation pathway. 5-mC can be oxidized iteratively to form 5-hmC, 5-fC and 5-caC. The intermediate 5-hmC can be diluted in a replication-dependent manner to regenerate unmodified C. Alternatively, TDG can excise 5-fC or 5-caC is excised by TDG as part of the BER pathway restoring unmodified C. Figure reprinted from[57] with permission.

Global DNA demethylation during early embryogenesis

In mammals, most methylation patterns are relatively stable across tissues and somatic cells. Changes in DNA methylation occur in a locus, cell type and lineage-specific manner to regulate certain cellular processes and genomic stability[69],[70]. An exception to this pattern is observed during early embryogenesis where the mammalian genome undergoes extensive epigenetic remodeling resulting in global erasure of 5-mC in both paternal and maternal genomes. Discovery of the TET family of enzymes and 5-hmC have shed new light on this process by showing that DNA demethylation can result from an active, enzymatically-driven process versus a passive, mitosis-dependent dilution. The process of extensive 5-mC erasure begins in zygotes immediately after fertilization[71], when the male and female pronuclei fuse. The maternal genome undergoes passive DNA demethylation in the absence of the maintenance methyltransferase DNMT1 during DNA replication, resulting in the restoration of unmodified cytosine. However, in the paternal genome, 5-mC is oxidized to 5-hmC by the action of TET3, and 5-hmC is then diluted in a replication-dependent manner to restore unmodified cytosine[71–74].

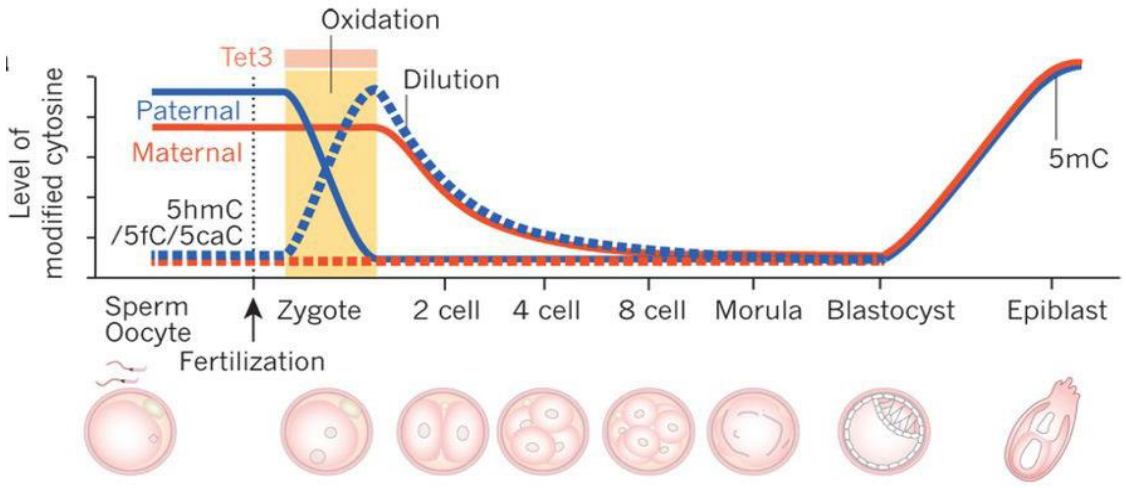

Figure 1.2. Global DNA demethylation during pre-implantation in mammals. The maternal DNA goes through passive demethylation and the paternal genome is demethylated in two steps. 5-mC is first oxidized by TET3 producing 5-hmC which is then diluted through a replication-dependent process. (Figure modified and reprinted from[57] with permission.

Structure and significance of TET enzymes

The TET family members (TET1, 2 and 3) are Fe (II)/α-KG- dependent oxygenases characterized by a core catalytic domain and a double-stranded β-helix fold. TET enzyme-mediated oxidative reactions utilize molecular oxygen and α-Ketoglutarate (α-KG) as substrates and Fe(II) as a cofactor to generate CO_2 and succinate[57,75]. The lack of availability of co-factors and substrates can have a direct effect on TET3-mediated 5-mC oxidation and hence active DNA demethylation. For example, α-KG is generated the activity of the enzymes isocitrate dehydrogenase 1 (IDH1), IDH2 and IDH3[76] from isocitrate. When IDH1 or IDH2 is overexpressed, or when levels of α-KG increase as a result of glucose or glutamate administration, a rapid increase in 5-hmC levels is observed in mammalian cells[77]. By contrast, downregulation IDH2 activity is associated with decreased levels of 5-hmC[78,79].

The TET family has three members, TET1, TET2, and TET3, all of which are identified in most mammals. Some vertebrates like zebrafish express all three TET proteins while only *tet2* and *tet3* have been identified in the *Xenopus* species. All of the TET family proteins contain a highly conserved catalytic domain in their carboxyl terminal, and TET1 and TET3 are reported to contain a DNA binding domain characterized by a CXXC motif that specifically binds unmethylated CpGs whereas TET2 partners with IDAX, an independent CXXC-containing protein[80–82,83,84].

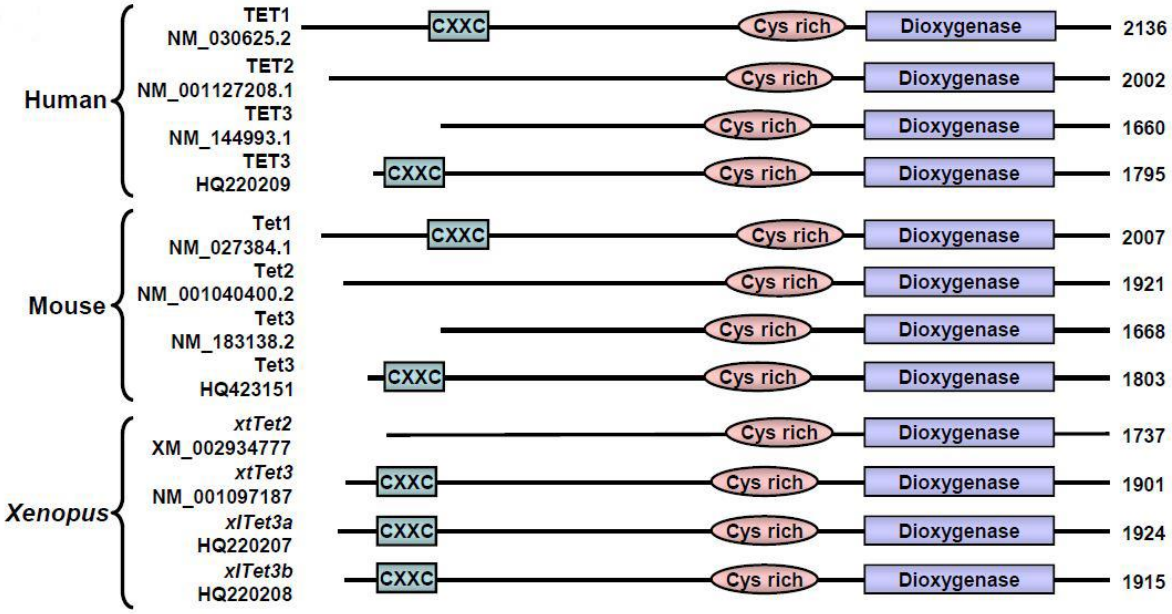

Figure 1.3. Domain structure of vertebrate TET proteins. Figure reprinted from[82] with permission.

TET Enzymes in early development

In embryonic stem (ES) cells, TET1 plays a key role in the maintenance of pluripotency through the regulation of a set genes involved in the maintenance of pluripotency (*Esrrb*, *Klf2*, *Tcl1* and *Zfp42, Nanog*). Knockdown of *Tet1* causes promoter

hypermethylation of these genes, resulting in downregulation of their expression in ES cells[85,63,86,87].

However, mice that are mutant for TET1 are viable and grossly normal with slight reduction in body weight[88]. The role of TET2 in embryonic development also seems subtle as mice deficient for TET2 are viable and fertile suggesting that the TET family of enzymes may have overlapping functions during early development. While *Tet1* and *Tet2* single knockouts didn't have drastic effects on development in mice, *Tet3* knockout mice exhibit postnatal lethality[89]. However, both *Tet1* and *Tet2* double knockout (DKO) embryos exhibited perinatal lethality[90] and *Tet1/2/3* triple knockout (TKO) ES cells fail to support embryonic development are severely depleted in 5-hmC[90,91]. These data collectively suggest that TET activity is essential for normal mammalian development.

TET enzymes in the brain

All three TET enzymes are expressed in the mammalian brain and 5-hmC is particularly abundant in mammalian brain representing 0.6% of total nucleotides and exhibiting about 40% more abundance than the amount of 5-methylcytosine (5-mC), in mouse Purkinje cells[51,92,93]. Consistent with these results, several groups have reported higher abundance of 5-hmC in brain regions including the hypothalamus, cerebral cortex, hippocampus, brainstem, cerebellum and retina compared to 5-hmC levels in several other tissues such as the kidney, lungs or liver[59,94].

Using immunostaining, Hahn and colleagues showed that 5-hmC levels increase in mouse brain in parallel with neuronal differentiation, corresponding with increased levels of *Tet2* and *Tet3* mRNAs in the ventricular zone (VZ)[92]. Using immunoprecipitation of 5-hmC, they reported that 5-hmC was enriched during neuronal

differentiation, especially at the promoters and gene bodies of upregulated genes critical for several neuronal functions like neuronal differentiation, migration, or axon guidance[92].

Additionally, knockdown of *Tet2* and *Tet3* resulted in defects in neuronal differentiation in mice, characterized by abnormal accumulation of cell clusters along the radial axis of VZ[92]. Other groups have reported that adult mice lacking TET1 exhibited disrupted cognitive functions as a result of impaired hippocampal neurogenesis[95], and mice lacking TET3 showed impaired neuronal progenitor cell (NPC) maintenance and differentiation of neurons[96].

While most studies pertaining to the role of 5-hmC and TET enzymes in neuronal development have been conducted in mice, Xu and colleagues [82] recently reported that TET3 plays an important role in early eye and neural development in *Xenopus*. They reported that TET3 directly regulates embryogenesis by binding to target gene promoters of developmental genes including genes crucial for neural and eye development, resulting in increased 5-hmC abundance hence activating the expression of target genes[80–82]. Consistent with the observation that 5-hmC mark is found predominantly in post-mitotic cells in the mammalian brain[97,98–101], Diotel and colleagues[97] recently reported that 5-hmC is highly enriched in differentiated neurons in zebrafish and *Xenopus* and not in proliferative cells in the whole ventricular zone in both species[97]. These reports highlight the importance of 5-hmC and TET enzymes in development of the vertebrate brain, particularly neurogenesis.

Despite growing interest in understanding the role of TETs in gene regulation, very little is known about how TET enzymes are recruited to specific genomic regions

and what the interacting partners of these enzymes are. Recently, Guan and colleagues[102] demonstrated that TET3 also strongly interacts with thyroid hormone receptor (TR) and stabilizes TRs presence in chromatin. This study sheds a new light on the role of TRs in specific, and nuclear hormone receptors in general in regulating DNA methylation[102].

Thyroid hormone in vertebrates

Thyroid hormones (T_3) are powerful signaling molecules that have profound effects on normal development, growth, physiology and behavior in vertebrates[103–105]. The role of T_3 has been shown to be particularly significant in the development of the brain. In the mammalian brain, thyroid hormones are shown to be essential for development of Purkinje cells, dendrite formation, neuronal migration, myelination and adult neurogenesis[106,107,108]. A lack of T_3 in early stages of neurogenesis can hence lead to a condition of severe mental retardation and deafness called cretinism in humans[109].

The role of T_3 in animal development has been studied in several vertebrate species, but tadpole metamorphosis has been particularly valuable for investigating the role T_3 in growth and development as T_3 has been shown to be both necessary and sufficient for tadpole metamorphosis [110,111]. Inhibiting synthesis of endogenous T_3 either by the use of a T_3 synthesis inhibitor or thyroidectomy prevents metamorphosis, while addition of exogenous T_3 to pre-metamorphic tadpoles induces precocious metamorphic-like changes in tissues [111,112] . Metamorphosis in tadpoles is classified into three stages (1) Pre-metamorphosis, when the tadpoles grow in size but exhibit no morphological changes (2) Pro-metamorphosis, when tadpoles grow the hindlimb (3)

Metamorphic climax, when tadpoles undergo rapid morphological changes. The circulating plasma T_3 concentration is low at pre-metamorphosis and increases during pro-metamorphosis (Nieuwkoop Faber [NF] stage 56) reaching maximum during metamorphic climax (NF 62) [113–116].

An increase in the level of T_3 represses larval genes resulting in loss of tadpole structures like the tail and gills and activates genes that induce formation of adult organs like the limb. Other organs present during metamorphic and adult stages, like the intestine, lungs and brain undergo drastic remodeling to help transition from larval life to an adult life. Notably, most of these changes have been shown to be mediated by the actions of T_3, making amphibian metamorphosis an excellent model system to study the effects of T_3 at cellular, biochemical and physiological levels [116].

Additionally, tadpole metamorphosis is similar to mammalian postembryonic development in several ways making it a great system to study vertebrate development. For example, after post-embryonic development, both tadpoles and mammals change habitats from an aquatic (amniotic) to a terrestrial atmosphere. This requires extensive remodeling of the lungs to facilitate breathing in the new environment. This and several other changes including remodeling of the intestine and brain depend on the presence of plasma T_3 both during tadpole metamorphosis and mammalian post-embryonic development[117,118].

Thyroid hormone receptors

Thyroid hormone modulates the suite of physiological, biochemical and morphological changes during metamorphosis by regulating its target genes by binding to specific TRs. Thyroid hormone receptors belong to the nuclear receptor superfamily

and function as ligand-induced transcription factors. In vertebrates, two TRs, TRα and TRβ are identified which are products of two separate genes. Expression of TRs is highly developmental stage and tissue specific[103]. For example, TRα is present during embryonic development, and TRβ appears later during development in most vertebrates[119]. Expression TRβ is predominant in the kidneys, liver, lungs, retina, brain, heart, and thyroid and TRα is highly expressed in the brain and heart[120],[103].

Thyroid receptors mostly function in a heterodimer with retinoid X receptors (RXRs)[121,122] and by binding to specific DNA sequences called thyroid hormone response elements (TRE). TREs may be located in gene promoters, within the body of the gene or a large distance (as much as 200 kilobases) away from the regulated gene and are characterized by the presence of a sequence of the hexanucleotide 'half site' (A/G) GGT(C/A/G) A. The TREs predominantly exist as a direct repeat with a spacing of four nucleotides between the half sites (DR+4), while they can also exist as everted repeat and inverted repeats with spacing of one to six nucleotides between the half sites. It is not uncommon for several types of TREs to exist within the same regulatory regions of T_3 target genes[123],[103].

Mechanism of thyroid hormone action

Thyroid hormone receptors are ligand- dependent transcription factors where the absence of T_3 leads to TR/RXR complex to function as transcriptional repressors; whereas in the presence of T_3, TR/RXR complex functions as an activator. In an unliganded state (absence of hormone), TRs recruit co-repressors such as nuclear co-repressor (NcoR) or silencing mediator of retinoid and thyroid hormone receptor

(SMRT) among others to recruit histone deacetylases (HDACs). This results in deacetylation of lysine residues of histone H3 and H4 at the local chromatin create a compact, inaccessible chromatin environment leading to repression of the target gene[124],[125,126]. Upon ligand (T_3) binding, TRs exchange co-repressors for co-activator complexes like ATP-dependent chromatin-remodeling proteins, the Steroid receptor co activator (SRC) /p160 family of proteins that either possess an intrinsic histone acetyltransferases (HAT) activity or recruit other HATs like CBP/p300 and PCAF to the locus, and generate an open chromatin environment resulting in gene activation [103,127,128].

Other co-activator complexes recruited by liganded TR include the mediator complex [103,129]. Thyroid receptor associated protein (TRAP) also known as the mediator complex is a multi-protein complex that interacts with RNA polymerase II in a ligand-dependent manner constituting the final step of co-activator mediated gene activation by liganded TRs[130,131].

Nuclear hormone receptors and DNA demethylation

While the role of liganded TRs in inducing histone modifications have been well studied, very little evidence exists to suggest that TRs and other nuclear hormone receptors may play a role in modulating DNA methylation. It was only in the past year that Hassan and colleagues demonstrated that retinoic acid receptor (RAR), a member of the nuclear hormone superfamily mediates active DNA demethylation by recruitment of TET/TDG complex to target genes[132] and Guan and colleagues reported that TRs and TET proteins interact *in vitro*[102]. These studies provide some evidence *in vitro*

suggesting a possible role for NRs in modulating DNA demethylation, a field yet to be explored.

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CHAPTER 2

DNA DEMETHYLATION IN XENOPUS TROPICALIS BRAIN DURING SPONTANEOUS METAMORPHOSIS

Abstract

Methylation of DNA is a key epigenetic modification regulating gene transcription typically leading to repression; while, DNA demethylation favors activation. Methylation of DNA is crucial for normal brain development and function. Thyroid hormone (T_3) plays important roles in vertebrate brain development, acting via nuclear receptors (TRs) that serve as epigenetic switches to modify chromatin structure. The role of histone modifications in T_3 action is well known, but it is not known if T_3 has any role in modulating DNA methylation, which together with histone modifications alters chromatin structure and gene transcription. We used *Xenopus* tadpole metamorphosis, a T_3 - dependent post-embryonic developmental process, to investigate a possible role for T_3 in the regulation of DNA methylation in brain development of a vertebrate. Using reverse transcription quantitative PCR we investigated developmental changes in mRNA levels in the diencephalon of *X. tropicalis* brain of genes that code for DNA demethylation enzymes (*tet2, tet3, idh1/2/3, gadd45 α/ β/ γ and tdg*). The mRNAs for each of these genes increased during metamorphosis and reached a maximum at metamorphic climax, when the level of circulating T_3 is highest. We used immunohistochemistry to investigate the distribution in tadpole brain, and

developmental changes in ten eleven translocase 3 (TET3), a methylated DNA-binding dioxygenase that catalyzes conversion of 5 methylcytosine (5mC) to 5 hydroxymethylcytosine (5-hmC), and the active DNA demethylation intermediates 5-hmC and 5 carboxy methylcytosine (5-caC). Immunoreactivity for TET3 and the DNA demethylation intermediates at metamorphic climax were mostly localized around the thalamic nuclei and ventral hypothalamus of the tadpole brain, known to be highly responsive to actions of T_3. These regions also exhibited highest immunoreactivity for TET3 and the DNA demethylation intermediates at metamorphic climax during spontaneous metamorphosis. Taken together, our findings support that the *X. tropicalis* tadpole brain undergoes DNA demethylation during metamorphosis and this is mediated, in part, by increased expression of genes that code for enzymes that catalyze DNA demethylation. To our knowledge, this is the first demonstration, in a developmental model system, showing a clear positive correlation between *tet3* mRNA, protein, and DNA demethylation intermediates 5-hmC and 5-caC.

Introduction

Amphibian metamorphosis is a dramatic example of a post-embryonic process controlled by thyroid hormone (T_3). The circulating plasma T_3 level increases progressively during metamorphosis, peaking at metamorphic climax. Anuran metamorphosis is often accompanied by a shift from an aquatic to a terrestrial environment. The underlying physiological processes facilitating this shift are mediated by T_3. An increase in the level of T_3 represses larval genes, and activates genes that facilitate formation of adult cell types, thus creating or eliminating many structures that facilitate adaptation to adult life[1,2].

Formation and development of the central nervous system (CNS) is dramatically affected by T_3 in the tadpole, where the brain undergoes several biochemical and morphological changes to prepare the animal for adult life. For example, during metamorphosis the sensory and motor neurons supplying the tail are lost[3–5,6] while new structures like the spinal cord segments connecting to the limbs develop[7,8]. The cerebellum undergoes expansion, characterized by the conversion of small, immature Purkinje cells to large, mature ones, and the neurosecretory neurons in the preoptic nucleus and hypothalamus mature. These changes have been shown to be dependent on T_3[9–12,6,13,14]. Additionally, T_3 is known to induce cell proliferation in neurogenic zones of the tadpole brain, followed later by the promotion of cell migration and differentiation[15].

The actions of T_3 are mediated by changes in gene transcription modulated by nuclear hormone receptors (T_3 receptors - TRs) that function as ligand-activated transcription factors, which can either activate or repress target genes through

modification of local chromatin structure through the recruitment of histone-modifying enzymes[16]. In the unliganded state, TRs recruit co-repressors to create a compact, inaccessible chromatin structure, and cause repression of the target gene. Upon T_3 binding, TRs recruit chromatin remodeling complexes, then exchange co-repressors for co-activators that include histone modifying enzymes like histone acetyl transferases (HATs), generating an open chromatin structure and thus facilitating entry of RNA polymerase 2 and hence gene transcription[17–19]. The role of T_3 in modulating histone modifications has been well studied, but a potential role for T_3 in regulating DNA methylation, another key epigenetic modification, has received little attention, especially during postembryonic development.

DNA methylation is a biochemical process where a methyl group is covalently added at the 5-carbon of the cytosine residue generating 5-methyl-cytosine (5-mC). Methylation of DNA may lead to gene repression, while DNA demethylation, which is the removal of the methyl group from cytosine, is associated with gene activation[20–22]. Active DNA demethylation in vertebrates is characterized by two enzymatic steps. First, 5-mC is oxidized into DNA demethylation intermediates 5-hydroxymethylcytosine (5-hmC), 5-formylcytosine (5-fC) and 5-carboxycytosine (5-caC) [23–26] . The oxidative part of active DNA demethylation is mediated by the Ten-eleven translocation (TET) family of enzymes. The mammalian TET family has three members, TET1, TET2 and TET3 all of which are expressed in the brain, although only genes for *tet2* and *tet3* have been identified in *Xenopus*. The three TET proteins have been well characterized for their role in DNA demethylation in mammalian systems. Mutational inactivation of the *tet2* gene has been reported to be associated with decreased DNA demethylation in myeloid

leukemias, and TET3 was shown to regulate neural and eye development in *Xenopus*[22,27].

Additionally, the isocitrate dehydrogenase family of enzymes (*idh1/2/3*) provide the substrate a-ketoglutarate for TET-mediated oxidation of 5-mC and are necessary for TET-dependent 5-hmC production[28,29]. The oxidized DNA demethylation intermediates are then excised by a suite of enzymes to replace the modified cytosine with an unmodified base, either through base excision repair (BER), or by nucleotide excision repair (NER). Key enzymes involved in the BER/NER-mediated excision of the modified cytosine in the active DNA demethylation pathway include thymine DNA glycosylase (TDG) TDG and growth arrest and DNA damage inducible 45 (GADD45 α/ β/ γ). Some groups have reported the involvement of activity-induced cytidine deaminase (AID) and apolipoprotein B mRNA editing enzyme, catalytic polypeptide (APOBEC) in the BER pathway of active DNA demethylation, although a direct role for these enzymes is still debated[30–32].

Using three independent biochemical assays, we found a progressive decline in global DNA methylation in *Xenopus* tadpole brain during metamorphosis (Kyono, Raj, et al. 2018, *in manuscript*). These findings were corroborated by a Methyl Capture sequencing (MethylCap-seq) experiment in which we analyzed genome-wide changes in DNA methylation in the preoptic area/hypothalamus of *X. tropicalis* tadpole brain at four stages of metamorphosis (Kyono, Raj, et al. 2018, *in manuscript*). Given these preliminary data, we hypothesized that DNA demethylation in tadpole brain during metamorphosis is mediated, in part, by increased expression of genes that code for enzymes that catalyze DNA demethylation. To test this hypothesis, we analyzed mRNA

levels in the preoptic area/hypothalamus of *X. tropicalis* tadpole brain during spontaneous metamorphosis using RTqPCR. We also investigated the distribution and developmental changes in immunoreactivity for TET3, and the DNA demethylation intermediates 5-hmC and 5-caC in tadpole brain. Taken together, our findings show that mRNA levels of genes involved in the active DNA demethylation pathway increased in *X. tropicalis* tadpole brain during metamorphosis, with highest mRNA levels observed during metamorphic climax. Furthermore, TET3, 5-hmC and 5-caC immunoreactivity increased in parallel with the changes in gene expression.

Materials and methods

Animal care and use

We obtained *X. tropicalis* tadpoles by in-house breeding or from Xenopus One (Dexter, MI) and reared them in dechlorinated tap water (water temperature 25 °C, pH 7) and maintained them on a 13L:11D photoperiod. We fed tadpoles *ad libitum* with pulverized frog brittle (NASCO, Fort Atkinson, WI) or Sera Micron plankton food. Tadpoles were staged using the developmental staging system of Nieuwkoop and Faber (NF) [33]. All procedures involving animals were conducted under an approved animal use protocol (PRO00006809) in accordance with the guidelines of the Institutional Animal Care and Use Committee at the University of Michigan.

RNA extraction and reverse transcriptase quantitative PCR (RT-qPCR)

For analysis of mRNA levels, we micro-dissected the region of the tadpole brain containing the preoptic area/hypothalamus. We pooled 2-5 brains (the number pooled depended on the stage/size of the animal and was held constant within a developmental

stage) for each biological replicate from five different stages of metamorphosis (NF 50, NF 54, NF 56, NF 62 and NF 66), flash froze them in liquid nitrogen and stored them at -80°C until RNA extraction. We isolated total RNA using the TRIZOL reagent (Invitrogen Life Technologies, Carlsbad, CA) according to the manufacturer's protocol and resuspended RNA in 25 µL of RNAse-free water. We removed genomic DNA by treating 1 µg of total RNA with 20 units of DNAse I (Promega # M6101) and generated cDNA with the High Capacity cDNA Synthesis Kit (Applied Biosystems Inc. (ABI), Foster City, CA). We conducted qPCR using SYBR mix (Innovative solutions # 4SPB20) and Fast 7500 Real-Time PCR System (ABI) or StepOne Real Time PCR Systems (Life Technologies). Two microliters of cDNA diluted 1:4 with water was used template in a 20 µL total qPCR reaction. We used relative quantification method[34],[35] to compare mRNA levels by generating standard curves for each gene using pooled cDNA. We normalized all mRNA quantities to mRNA of the reference gene *ef1a* which did not change during metamorphosis or following T_3 treatment (Data not shown). Primer sequences are given in Table 2.1.

Production and purification of polyclonal antiserums to *X. tropicalis* TET3 (xlTET3)

Following analysis of sequence similarity with known TET proteins, analysis of sequence similarity to other *Xenopus* proteins using BLAST, and hydropathy analysis to determine hydrophilic regions of TET3, we selected a 677 amino acid stretch of *X. laevis* TET3 corresponding to amino acids 217-840 as the epitope for antiserum production. This region does not share sequence similarity with other frog or mammalian TET proteins (i.e., TET1 and TET2) or any other proteins in the database.

We amplified by PCR a 2031 bp cDNA fragment of *X. laevis* TET3 corresponding to amino acids 217-840 using the xl-FLAG-tet3 plasmid [22] as template (oligonucleotide primers given in Table 2.1). We subcloned the cDNA into the pMCSG7 vector (Midwest center for structural genomics) and transformed Rosetta2 DE3 cells (EMD Millipore) with the cloned plasmid. We grew the transformed cells overnight at 37^{o}C in LB broth containing ampicillin, then added 1/10th of the overnight culture to Terrific broth and grew to a final optical density of 600 nm.

We induced protein expression by treating the cells with 0.4 mM IPTG at 37^{o}C for 4 hr. We resuspended the cell pellets in 40 mL of lysis buffer and resuspended the pellets in wash buffer for 30 minutes at 4^{o}C. We then centrifuged the cells and resuspended in 30 mL of pellet solubilization buffer overnight at 4^{o}C. We centrifuged the solution, added the supernatant to 10 mL Ni-NTA superflow resin (Qiagen) prewashed with Ni wash buffer 1 and incubated at 4^{o}C for 1 hr. We further washed the pellets three times with Ni wash buffer 1 and eluted the protein in 30 mL of Ni elution buffer 1. Eluted protein was concentrated to 5 mL using S200 size exclusion column (GE Healthcare Life Sciences) with a refolding buffer. We analyzed the eluted and concentrated protein by SDS-PAGE and verified the size. We sent the purified antigen to Lampire Biological Laboratories for polyclonal antiserum production in two rabbits (animal ID: 23560 and 23561).

We monitored antiserum titers by enzyme-linked immunosorbent assay (ELISA). For ELISA, we coated the wells of microtiter plates (Dynatech inc, Va) with 1 µg of antigen using coating buffer (2X: 0.795 g Na2Co3, 1.465 g NaHCO3, 0.5 mL NaN3 20 %, QS to 250 mL, pH 9.6, diluted 1:1 before use) to a final volume of 100 µL and

incubated at 4^{o}C overnight. We rinsed the wells three times with PBS-Tween (PBST; 0.5 % Tween 20), added blocking buffer (PBS-T+ 0.5 % BSA), and incubated for 30-60 minutes at RT. We removed the blocking buffer and added xlTET3 antiserum or pre-immune serum to the wells at dilutions of 1/10000, 1/20000, 1/40000, 1/80000, 1/160000, 1/320000, in blocking buffer. The plates were then incubated at RT for 2 hr, the wells rinsed with PBST thrice, then incubated with goat anti-rabbit alkaline phosphatase (GAR-AP) diluted 1:5000 in blocking buffer in a 100 µL total volume for 2 h at RT. Wells were washed with PBST thrice and added with 100 µL of substrate (1 tablet/ 5 mL Diethanolamine (DEA buffer) and analyzed for absorbance at a wavelength of 405 nm. Antiserum 23561 had the highest titer, so we selected this antiserum for experiments and purified the IgG fraction by Protein A chromatography following the manufacturer's protocol (Millipore Sigma #16-156)

Validation of the xlTET3 antiserum

We evaluated the specificity of our xlTET3 antiserum by dot blotting, immunocytochemistry, immunohistochemistry and ChIP assay.

Dot Blotting.

We spotted 1.5 µg of genomic DNA on a nitrocellulose membrane (Schlein & Schuell, BA-S-83) and blocked non-specific sites by incubating the membrane in 5% BSA in TBS-T in a 10 cm Petri dish. The membrane was then incubated with primary antibody: purified TET3 IgG (23561) at concentrations of 0.1 µg/ml, 0.25 µg/ml, 0.5 µg/ml and 5 µg/ml or straight antiserum (23561) at dilutions of 1/1000 or 1/5000 in BSA/TBS-T for 30 min at RT. Primary antibody was replaced by pre-immune serum as negative control. The membrane was then washed three times with TBS-T and

incubated with secondary antibody conjugated to HRP (Jackson immune Research, 111-035-144; 1/30000 dilution) for 30 min at RT. We washed the membrane three times with TBS-T, once with TBS then incubated ECL reagent (ThermoFisher, Pierce) for 1 min, and captured images of all blots together using the ChemiDoc MP imaging system (BioRad). We conduct immunostaining without secondary or primary antibodies as negative controls.

Immunocytochemistry.

We plated 100,000 XLT-15 cells (a myoblast-like cell line derived from *Xenopus laevis* tadpole tail)[36] in 6 well cell culture plates in L-15 media stripped of T_3 [37] and transfected the cells with 1 µg of xl-TET3-FLAG or empty pCMV plasmid. Forty-eight hr after transfection, we fixed the cells with 4% PFA for 30 min at RT and washed them 3 times with 0.6X DPBS, then permeabilized them by incubation in DTPBS (0.6X DPBS + 0.1% Triton X) for 10 minutes at RT. We blocked the cells by incubating with blocking buffer (0.6 x DPBS + 5% BSA+ 0.05% Triton X) for 2 hr at RT and incubated with primary antibody (in-house purified TET3 IgG; 23561) diluted in 0.6X DPBS+ 1% BSA+ 0.05% Triton X at 4ºC overnight. Cells were washed 3 times with DPBS, then incubated with DyLight 550-conjugated goat anti-rabbit IgG secondary antibody (#84541, Thermo Scientific, Grand Island, NY, USA) at RT for 2 hr. Cells were washed with DPBS three times and counterstained by incubating with DAPI diluted 1:1000 in 0.6X PBS for 10 min at RT, then washed with DPBS three times. We captured digital micrographic images using an Olympus IX81 inverted microscope (Olympus, Tokyo, Japan). Brightness, contrast, and evenness of illumination were adjusted uniformly for images shown in the figures using Adobe Photoshop CS6 (Adobe Systems, Inc., San Jose, CA).

Chromatin immunoprecipitation (ChIP) assay.

To further validate the xlTET3 antiserum we conducted ChIP assay on chromatin isolated from *X. laevis* embryos at NF stages 19-20, and analyzed the promoters of three genes previously shown to have enhanced TET3 association in chromatin (*pax6, rx* and *sox9*) at this stage of development[22]. We pooled ~70 *X. laevis* NF stage 19-20 embryos per biological replicate and prepared chromatin as described[22]. We sheared the chromatin using a Covaris M220 ultrasonicator (Covaris, Woburn, MA) for 20 minutes at peak power 75 W, duty factor 8 and 200 cycles to obtain chromatin fragments of about ~250 bp. We quantified sheared chromatin using a Nanodrop (Thermo scientific, NonoDropLite) and conducted ChIP assay on 10 µg of total chromatin (5 µg of chromatin for inputs) in a 500 µL reaction volume as previously described[38,39] using 5 µL of pre-immune serum (negative control) or 5 µL our straight xlTET3 antiserum (23560 and 23561). We used targeted SYBR GREEN qPCR to measure immunoprecipitated DNA using a relative quantification method by generating standard curves for each gene using pooled input samples. We analyzed the promoters of *actc* and *myl2* (two negative control regions with no TET3 association expected) and *sox9*, *rx* and *pax6* (three genes for which TET3 association in chromatin has been shown in *X. laevis* embryos) using primer sequences published by[22] (oligonucleotide sequences are given in Table 2.1).

Immunohistochemistry (IHC)

We obtained brains for IHC by dissecting the heads of *X. tropicalis* tadpoles at six different stages of metamorphosis (NF 50, NF 54, NF 56, NF 58, NF 62 and NF 66). We fixed the tadpole heads in 4% paraformaldehyde made in 0.6X phosphate buffered

saline (PBS) overnight at 4°C, then dissected the brains out of the skull and further fixed them in 4 % PFA for 2-3 hr at 4°C. We transferred the brains to 30% sucrose in 0.6X PBS at 4°C overnight followed by saturation in a 2:1 solution of sucrose:Tissue-Tek Cryo-OCT compound (Fisher Scientific) overnight at 4°C. We embedded the brains in a mould in OCT complex, froze and stored the brains at -80°C until use. We made 16 µM transverse cryosections on Superfrost slides (Fisherbrand, 12-550-15) and stored the slides at -80°C until processing for IHC.

For IHC, we air-dried the slides for 30 minutes, rehydrated them in 0.6X PBS and subjected them to antigen retrieval by immersing slides in 0.01 M sodium citrate, pH 6 at 95 °C for ten minutes. We then let the slides cool to room-temperature (RT) and blocked with Superblock (Pierce Chemical Co.) plus 5% normal goat serum and 0.3% Tween-20 in 0.6X PBS for 1-2 hr at RT. After blocking, we incubated the slides overnight at 4°C with either rabbit polyclonal 5-hmC (Diagenode C15410205-20), 5-caC antibody (Diagenode C15410204-20) at a dilution of 1:500 or xlTET3 IgG (23561; 0.7 µg/ml).

For preabsorption experiments we incubated the xlTET3 IgG with purified antigen at a concentration of 100 µg/ml overnight at 4°C before incubation with tissue sections. We used the DyLight 550-conjugated goat anti-rabbit IgG secondary antibody (#84541, Thermo Scientific, Grand Island, NY, USA) and mounted the slides with coverslips with ProLong™ Diamond Antifade Mountant (Thermo Fisher Scientific, catalog # P36965). We imaged immune stained sections by inverted fluorescent microscopy using an Olympus IX81 inverted microscope (Olympus, Tokyo, Japan) and carefully matched sections for anatomical level following the *Xenopus* brain atlas developed by Tuinhof

and colleagues [40]. We captured digital micrographic images by uniformly adjusting exposure, and for the captured images we adjusted brightness, contrast, and evenness of illumination uniformly using Adobe Photoshop CS6 (Adobe Systems, Inc., San Jose, CA) for further image analysis and representation.

Statistics and Data Analysis

We used SigmaPlot statistical software (version 13; Systat Software, San Jose, CA) for data analyses. We conducted one-way ANOVA followed by Fisher's least significant difference (Fisher's LSD) *post hoc* analysis or Student's independent sample *t*-test on data that were Log10-transformed before statistical analysis.

Results

Expression of genes that code for enzymes involved in active DNA demethylation during spontaneous metamorphosis.

We analyzed mRNA levels for genes that code for enzymes that catalyze DNA demethylation (*tet2, tet3, idh1/2/3, gadd45α/ β/g, tdg, idax, aid* and *apobec2*) in the preoptic area/hypothalamus of *X. tropicalis* brain at five stages of metamorphosis (NF 50, NF 54, NF 56, NF 62 and NF 66). We found that the mRNA levels for all genes, except *aid* and *apobec2* which did not change, were lowest at NF stage 50, then showed progressive increases during metamorphosis and were maximal at metamorphic climax (NF stage 62; ~2 to 3 fold increases relative to NF stage 50), when circulating [T_3] is at its maximum[41] (Fig. 2.1). Of the genes that increased during metamorphosis, the mRNAs remained at similar elevated levels in the post-

metamorphic frog (NF stage 66), except *gadd45γ* and *idh2* which showed statistically significant declines (Fig 2.1).

Distribution of immunoreactivity (ir) for TET3 and DNA demethylation intermediates in the brain of *X. tropicalis* tadpoles at metamorphic climax

We first verified the titer and specificity of our antiserum to xlTET3 using ELISA, dot blot, immunocytochemistry, immunohistochemistry and ChIP assays (Fig. 2.2). Using ELISA, we found that both antiserums (23560 and 23561) showed high titers, and 23561 was highest so we used this antiserum for experiments (Fig 2.2 A). We found that both the straight xlTET3 antiserum and the Protein A-purified IgG showed specific, dilution-dependent signal in dot blot analysis using the *E. coli*-expressed xlTET3$_{217\text{-}840}$ as antigen, and in immunocytochemistry of XLT-15 cells transfected with the xl-TET3-FLAG expression vector (Fig 2.2 B,C). Using IHC, we found that xlTET3-ir (using the purified anti xlTET3 IgG) was detected in NF stage 58 tadpole brain and was extinguished by pre-absorption of the antibodies with the *E. coli*-expressed xlTET3$_{217\text{-}840}$ (Fig 2.2 D). Using ChIP assay, we were able to replicate the results published by Xu et al[22], showing TET3 association in chromatin from NF stage 19-20 *X. laevis* embryos at promoters of *pax6*, *rx* and *sox9*, but not at the promoters of the negative control genes *actc* and *myl2* (Fig 2.2 F).

Using our purified anti-xlTET3 IgG, we first analyzed the distribution of xlTET3-ir in transverse sections of tadpole brain at metamorphic climax, when the mRNA level of *tet3* is highest (Fig. 2.1). We saw no xlTET3-ir in the most rostral regions of the telencephalon (Fig. 2.3; Appendix A: Supplementary Fig 2.1, regions A,B,C; data not

shown). xlTET3-ir was first detected in the most rostral pallium (Fig. 2.3; Appendix A: Supplementary Fig 2.1, region D), and moving caudally, we saw xlTET3-ir throughout the pallium, the pre-optic area (Fig. 2.3; Appendix A: Supplementary Fig 2.1, regions E,G) and the succeeding brain regions (Fig. 2.3; Appendix A: Supplementary Fig 2.1, regions I,K, M), with highest signal in the thalamic nuclei (anterior, ventromedial, posterior, lateral), the ventral hypothalamic nucleus and the tegmentum (Fig. 2.3). The xlTET3-ir was low or absent in the hindbrain and spinal cord (data not shown).

We then analyzed the distribution of 5-hmC-ir and 5-caC-ir in tadpole brain at metamorphic climax. The 5-hmC-ir and 5-caC-ir showed a similar distribution patterns in tadpole brain as that of xlTET3-ir, with no 5-hmC or 5-caC signal in the most rostral regions of the telencephalon (data not shown). The 5-hmC-ir and 5-caC-ir was first detected in the region of the pallium (Fig. 2.4,2.5; Appendix A: Supplementary Fig 2.1, region E), then in the thalamic nuclei and the ventral hypothalamic nucleus, with faint signal observed in the tegmentum (Fig. 2.4, 2.5; Appendix A: Supplementary Fig 2.1, regions E,F,G,H,I,J,K,L: only the regions E,G,I,K,M are shown in Fig 2.4, 2.5). The highest 5-hmC-ir was observed in the preoptic area and thalamic nuclei (Fig. 2.4; Appendix A: Supplementary Fig 2.1, regions E,G, K). The highest 5-caC-ir was observed in the thalamic nuclei and ventral hypothalamus (Fig. 2.5; Appendix A: Supplementary Fig 2.1, region K).

Changes in xlTET3, 5-hmC and 5-caC immunoreactivity in *X. tropicalis* tadpole brain during spontaneous metamorphosis.

We chose the tadpole brain region containing the thalamic nuclei and ventral hypothalamic nucleus (Appendix A: Supplementary Fig 2.1, region K) for IHC analysis during spontaneous metamorphosis, as this region showed consistently high immunoreactivity for TET3, 5-hmC and 5-caC in metamorphic climax stage animals (Fig. 2.3-2.5; also in NF stage 58 and 66 animals; data not shown). This region also contains neurosecretory neurons that project to the median eminence to control pituitary hormone secretion and known to be highly responsive to T_3[42].

We saw faint xlTET3ir in early pro-metamorphic tadpole brain (NF stages 54 and 56) which then increased at NF stage 58 and reached a maximum at NF stage 62. These changes in xlTET3-ir parallel changes that we saw in *tet3* mRNA (Fig. 2.1). The intensity of xlTET3-ir was highest in the thalamic nuclei, with lower signal in the ventral hypothalamus. The xlTET3-ir declined at the completion of metamorphosis (NF stage 66; Fig. 2.6).

Similar to xlTET3-ir, 5-hmC-ir in tadpole brain was low or non-detectable during pro-metamorphosis (NF stages 54 and 56; Fig. 2.7), then began to increase at NF stage 58 and reached a maximum in the post-metamorphic frog (NF stage 66). The intensity of 5-hmC-ir was highest in the thalamic nuclei, with lower signal in the ventral hypothalamus, similar to the distribution of xlTET3-ir (Fig. 2.7).

We detected 5-caC-ir at earlier developmental stages than xlTET3-ir or 5-hmC-ir (Fig. 2.8). At NF stage 50, we saw low but distinct 5-caC-ir that was localized to the thalamic nuclei. The signal increased during metamorphosis, reached a maximum at metamorphic climax (NF stage 62, Fig. 2.8). Throughout metamorphosis the 5-caC-ir increased in the thalamic nuclei and appeared in the ventral hypothalamus (Fig 2.8).

Discussion

The goal of this study was to investigate developmental changes in the cellular machinery that regulates DNA methylation, and to begin to investigate mechanisms by which the tadpole brain genome becomes demethylated during metamorphosis. Here we show that the mRNA levels of genes involved in the active DNA demethylation pathway increase during metamorphosis with highest mRNA levels during metamorphic climax, when circulating T_3 is at its maximum. We also show that this increase in mRNA levels coincides with increased immunoreactivity for TET3, an enzyme that catalyzes the oxidation of 5-mC, and the active DNA demethylation intermediates 5-hmC and 5-caC in *Xenopus* tadpole brain during spontaneous metamorphosis. To our knowledge, this is the first demonstration, in a developmental model system, of increases in the expression of DNA demethylation enzymes that correlate with decreases in DNA methylation (Kyono, Raj, et al., 2018*, in manuscript*). Furthermore, this the first demonstration of discrete expression patterns in the developing brain, and clear positive correlation between *tet3* mRNA, protein, and DNA demethylation intermediates 5-hmC and 5-caC.

Methylation of DNA is an important epigenetic modification that plays a key role in the regulation of gene transcription, and has been shown to be crucial for normal development and function of the brain[20,43]. Similarly, T_3 is a powerful signaling molecule regulating gene transcription with significant roles in animal development, particularly in the development of the brain. The role of T_3 in regulating gene expression through post-translational modifications of histones has been well studied[10,15,17,44]. In this chapter, we focused on investigating the changes in DNA methylation, an important epigenetic

modification, in the developing tadpole brain during spontaneous metamorphosis, a post-embryonic process orchestrated by the actions of T_3.

We previously found a progressive decrease in global DNA methylation in *Xenopus* tadpole brain during metamorphosis using three independent biochemical assays (Kyono, Raj, et al. 2018, *in manuscript*). These findings were supported by a MethylCap-seq experiment in which we observed genome-wide changes in DNA methylation in the preoptic area/hypothalamus of *X. tropicalis* tadpole brain at four stages of metamorphosis (Kyono, Raj, et al. 2018, *in manuscript*). Here, we provide evidence to support the hypothesis that DNA demethylation observed tadpole brain during metamorphosis is mediated, in part, by increased expression of genes that code for enzymes catalyzing demethylation.

We provide evidence that the mRNA levels of genes involved in DNA demethylation (*tet2, tet3, gadd45α, gadd45β, gadd45γ, idh1, idh2, dh3a* and *tdg)* increase with progress in metamorphosis, and show highest expression at metamorphic climax, when circulating T_3 is highest. Notably, the genes that have the greatest experimental support for their direct involvement in active DNA demethylation (*tet2, tet3, tdg* and *gadd45γ*) exhibit the largest increases, which closely parallel the increasing circulating plasma T_3 level. This suggests the hypothesis that these are direct T_3 target genes and may require ongoing T_3 production for accelerated transcription during metamorphosis. Further analysis by treating the tadpoles with a goitrogen to inhibit T_3 synthesis and quantifying the mRNA levels of the above genes could provide more evidence to support the hypothesis.

We show that the distribution of xlTET3, 5-hmC and 5-caC immunoreactivity is minimal in rostral regions of the telencephalon, the hindbrain and spinal cord in the tadpole brain at metamorphic climax. Additionally, we provide evidence that xlTET3, 5-hmC and 5-caC distribution is highest in the midbrain, particularly in the thalamic nuclei (anterior, ventromedial, posterior, lateral), the ventral hypothalamic nucleus and the tegmentum, regions known to be highly responsive to T_3 [6,42,45]. Similar to our findings, a recent study by Diotel and colleagues[46] reported that in larval (NF 50) and juvenile (NF 66) *Xenopus laevis*, 5-hmC was widely detected throughout the thalamic area and dorsal telencephalic areas of the brain in non-proliferative cells.

We show here that during spontaneous metamorphosis xlTET3-ir increases with highest immunoreactivity at metamorphic climax. Consistent with xlTET3-ir during metamorphosis, we found that the distribution of 5-hmC and 5-caC ir shows a progressive increase during metamorphosis in the brain region containing the thalamic nuclei and ventral hypothalamic nucleus, in parallel with circulating plasma T_3 levels.

The epigenetic marks 5-hmC and 5-caC are cytosine modifications that result from oxidation of 5-mC by TET enzymes and all three of the *tet* enzymes are expressed in the mammalian brain. Both 5-hmC and 5-caC are shown to be abundant in the in the central nervous system (CNS), particularly in the cerebellum, cortex and hippocampus of the mammalian brain, corresponding to high levels of *Tet3* expression in the same regions of the brain as 5-hmC abundance[47]. Some recent studies have also reported that abundance of 5-hmC in non-mammalian vertebrates like zebrafish brain[46,48], *X. laevis* brain[46] and the spinal cord of the amphibian axolotl[49]. Consistent with these reports, we provide evidence that the immunoreactivity of 5-hmC and 5-caC

intermediates in the *Xenopus* brain increase, corresponding to an increase in both the mRNA levels of *tet2* and *tet3*, similar to previously reported results.

We have not investigated the distribution of TET2 in the tadpole brain corresponding to regions of DNA demethylation yet. Identification of expression and distribution profile of TET2 is essential to understand the specific roles of both TET2 and TET3 in DNA demethylation in the brain. In addition to this, conducting IHC for DNA demethylation intermediates on brains from *tet2*/*tet3* knockout animals at various stages of metamorphosis will further help understand the role of these enzymes and the compensatory mechanism, if any in mediating active DNA demethylation in the developing brain.

In conclusion, the present study sheds light on the developmental changes in modulation of DNA methylation, and the mechanisms by which the tadpole brain genome becomes demethylated during post-embryonic brain development. We show that the *X. tropicalis* tadpole brain exhibits characteristics of active DNA demethylation in parallel to the level of circulating T_3 during spontaneous metamorphosis. Here we show that the mRNA levels of genes involved in the active DNA demethylation, immunoreactivity for TET3, 5-hmC and 5-caC increase during metamorphosis; the highest mRNA levels and immunoreactivity occurs during metamorphic climax, when circulating T_3 is at its maximum. Taken together, our data suggest that these changes may be crucial for the coordination of gene regulation programs that underlie tissue morphogenesis. To our knowledge this is the first study to investigate the profile and distribution in the brain of active DNA demethylation enzymes and intermediates during post-embryonic brain development.

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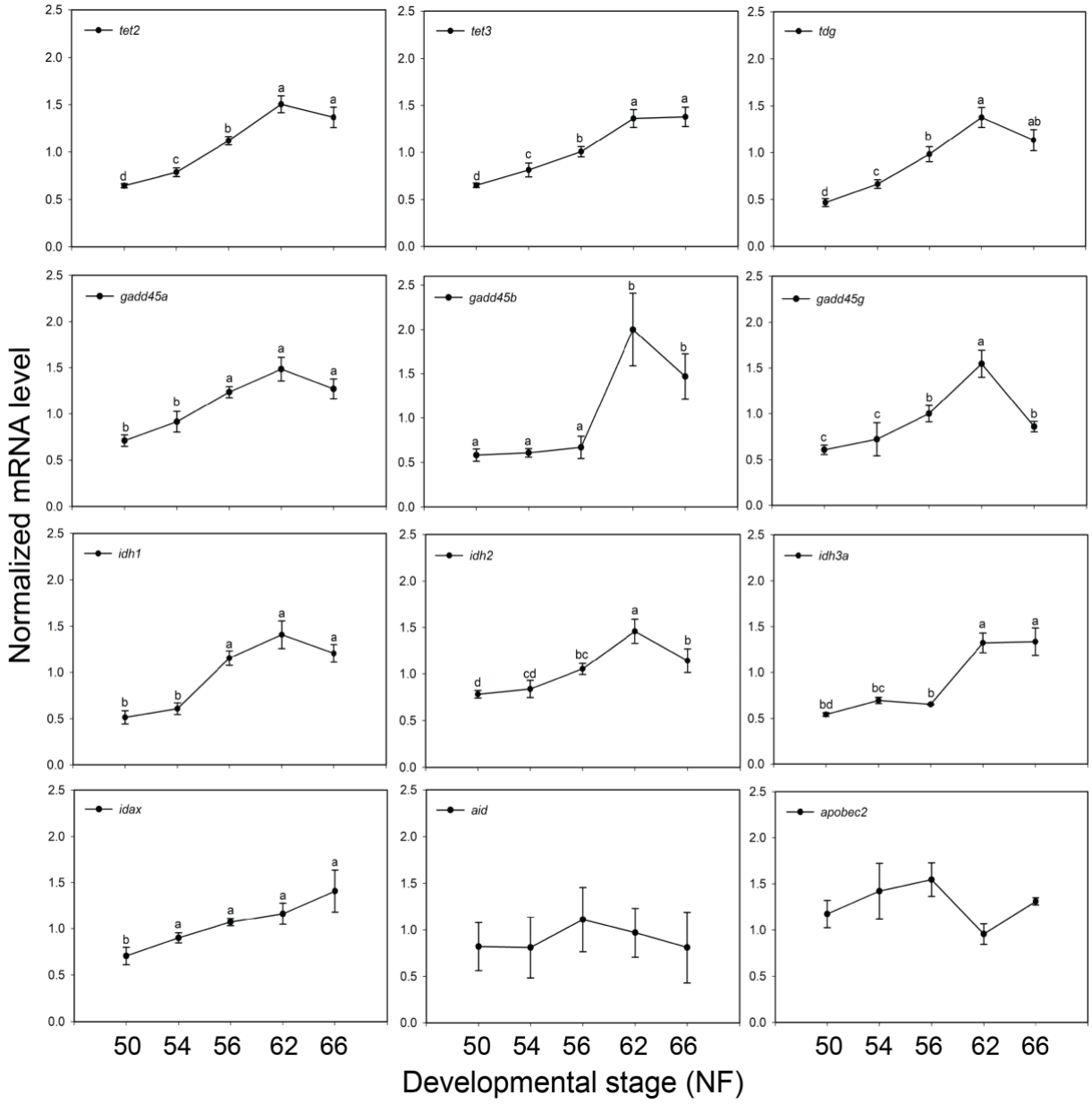


Figure. 2.1. Changes in mRNA levels for genes that code for enzymes that catalyze DNA demethylation in *X. tropicalis* tadpole brain during spontaneous metamorphosis. We analyzed developmental changes in mRNA levels in the preoptic area/diencephalon of *X. tropicalis* tadpole brain by RTqPCR. The mRNA levels were normalized the reference gene *ef1α,* whose mRNA did not change during metamorphosis (data not shown). Points represent the means ± SEM (n=5/developmental stage). Means with the same letter are not significantly different (one-way ANOVA, $p < 0.001$ for *tet2, tet3, tdg, gadd45α, gadd45β, gadd45γ, idh1*, *idh2* and *idh3a*).

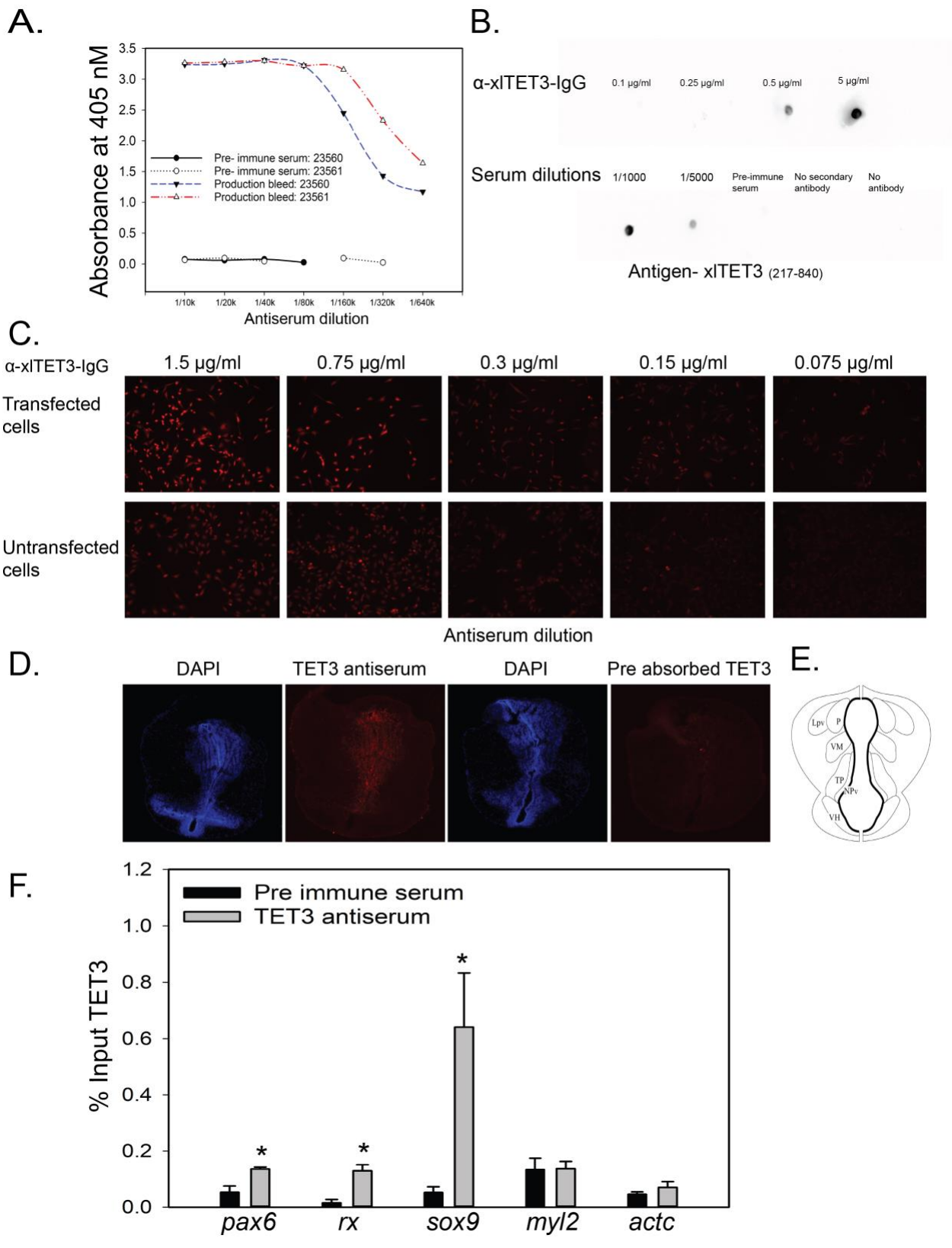

A.
Absorbance at 405 nM
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Pre- immune serum: 23560
Pre- immune serum: 23561
Production bleed: 23560
Production bleed: 23561
1/10k
1/20k
1/40k
1/80k
1/160k
1/320k
1/640k
Antiserum dilution
B.
α-xlTET3-IgG
0.1 µg/ml
0.25 µg/ml
0.5 µg/ml
5 µg/ml
Serum dilutions
1/1000
1/5000
Pre-immune serum
No secondary antibody
No antibody
Antigen- xlTET3 (217-840)
C.
α-xlTET3-IgG
1.5 µg/ml
0.75 µg/ml
0.3 µg/ml
0.15 µg/ml
0.075 µg/ml
Transfected cells
Untransfected cells
Antiserum dilution
D.
DAPI
TET3 antiserum
DAPI
Pre absorbed TET3
E.
Lpv
P
VM
TP
NPv
VH
F.
% Input TET3
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Pre immune serum
TET3 antiserum
*
*
*
pax6
rx
sox9
myl2
actc

Figure. 2.2. Characterization of a rabbit polyclonal antiserum to *X. laevis* TET3. (A): The presence of anti-xlTET3 IgG in the in house-generated anti-xlTET3 serum was successfully confirmed by ELISA. Absorbance measured at 405 nm with 1 µg of purified protein incubated with varying amounts of TET3 antiserum or preimmune serum (23560 and 23561) (B) : The ability of anti xlTET3 serum to detect TET3 protein was confirmed using dot blot. 1.5 µg of purified TET3 protein was blotted on nitrocellulose membrane and incubated with varying amounts of purified anti xlTET3 IgG or straight antiserum or with pre-immune serum/no primary antibody/no secondary antibody (negative controls). (C) : Verification of immunoreactivity of purified anti xlTET3 IgG in immunocytochemistry assay. XLT-15 cells were transfected with 1 µg of xl-TET3 plasmid or untransfected. Cells were incubated with varying concentrations of purified, lyophilized anti xlTET3 IgG and analyzed for fluorescence using inverted fluorescent microscopy using Olympus IX81 inverted microscope (Olympus, Tokyo, Japan) (D): Specificity of anti xlTET3 immunoreactivity was tested using IHC. Shown are representative images from immunohistochemical analysis of anti xlTET3 immunoreactivity in the *X. tropicalis* brain region containing the ventral hypothalamus at developmental stage NF 58. Corresponding sections from the same brain were either incubated with 0.75 µg/mL purified TET3 IgG (left) or 0.75 µg/mL purified TET3 IgG pre-absorbed with 100 µg/mL TET3 antigen overnight (right). Pre-absorption of the antiserum extinguished signal indicating the signal specificity observed in the left panel (n=3 brains/treatment). (E): Schematic of transverse section of the tadpole brain at the region of ventral hypothalamus and thalamic nuclei, corresponding to the region of the brain IHC was conducted on. (F): Characterization of the TET3 antiserum using ChIP assay. Targeted ChIP assay results for a few selected loci from the *Xu et al,* publication was replicated using anti xlTET3 antiserum on chromatin extracted from on Stage19 *X. laevis* whole embryos. Shown are % TET3 input observed at the positive loci *rx* promoter, *pax6* promoter and *sox9* promoter and negative control regions *actc* and *myl*2 promoters (n=4, Asterisks indicate statistical significance over pre-immune serum, independent student's t test, $p < 0.05$).

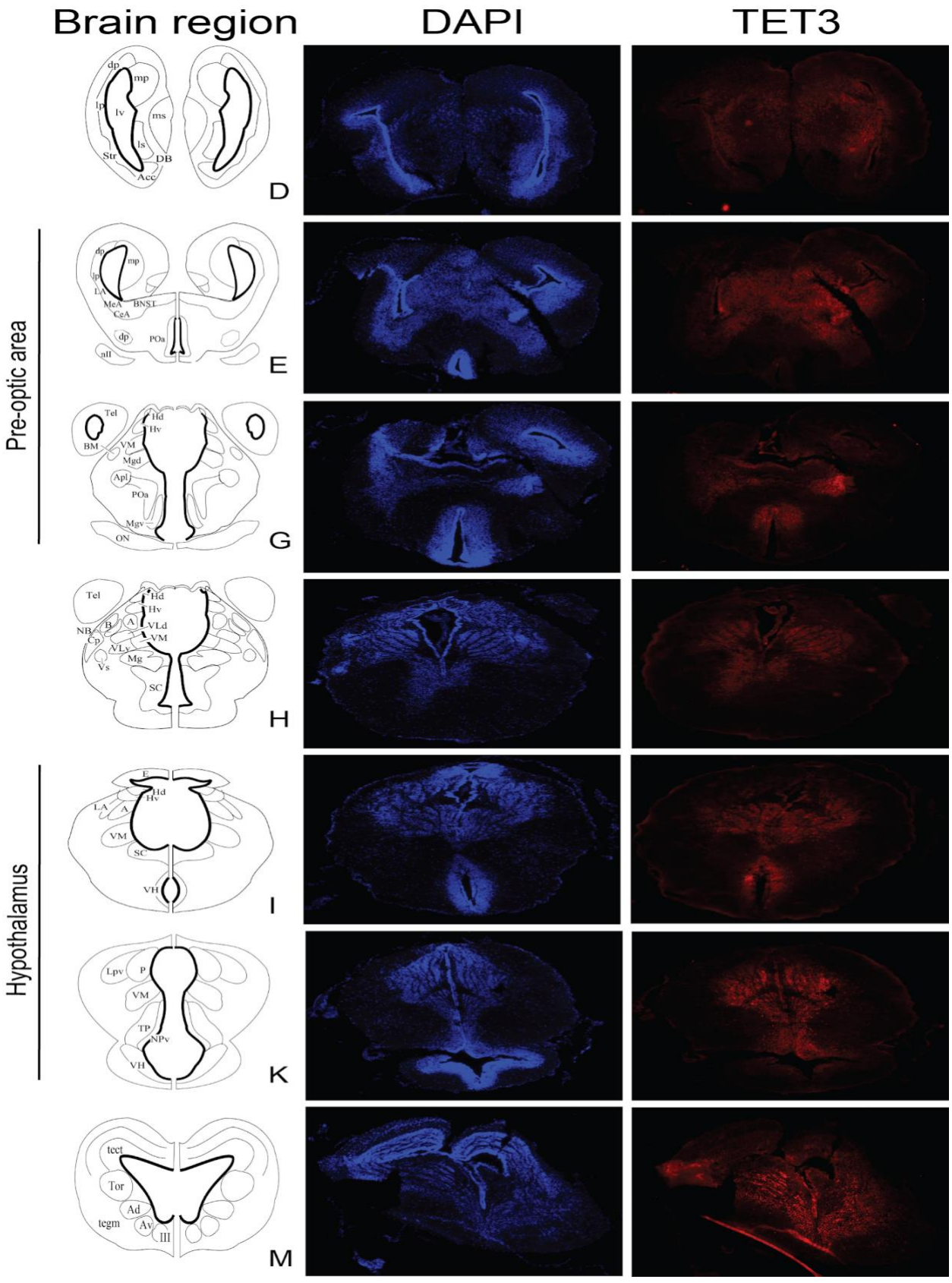

Brain region
DAPI
TET3
Pre-optic area
Hypothalamus
dp
mp
lp
lv
ms
ls
Str
DB
Acc
D
LA
MeA
BNST
CeA
POa
aci
E
Tel
Hd
Hv
BM
VM
Mgd
Apl
Mgv
ON
G
VLd
NB
Cp
VLv
Mg
Vs
SC
H
E
I
VH
Lpv
P
TP
NPv
K
tect
Tor
Ad
tegm
Av
III
M

Figure. 2.3. Distribution of TET3 immunoreactivity in *X. tropicalis* brain at metamorphic climax. Immunohistochemistry for TET3 was conducted on 16 µm transverse sections from *X. tropicalis* brain at NF stage 62. Shown are rostral to caudal representative images taken at 4X magnification. Three brains were analyzed with similar results. Letters next to schematic diagrams represent the corresponding brain regions shown in Appendix A, Supplemental Fig 2.1.

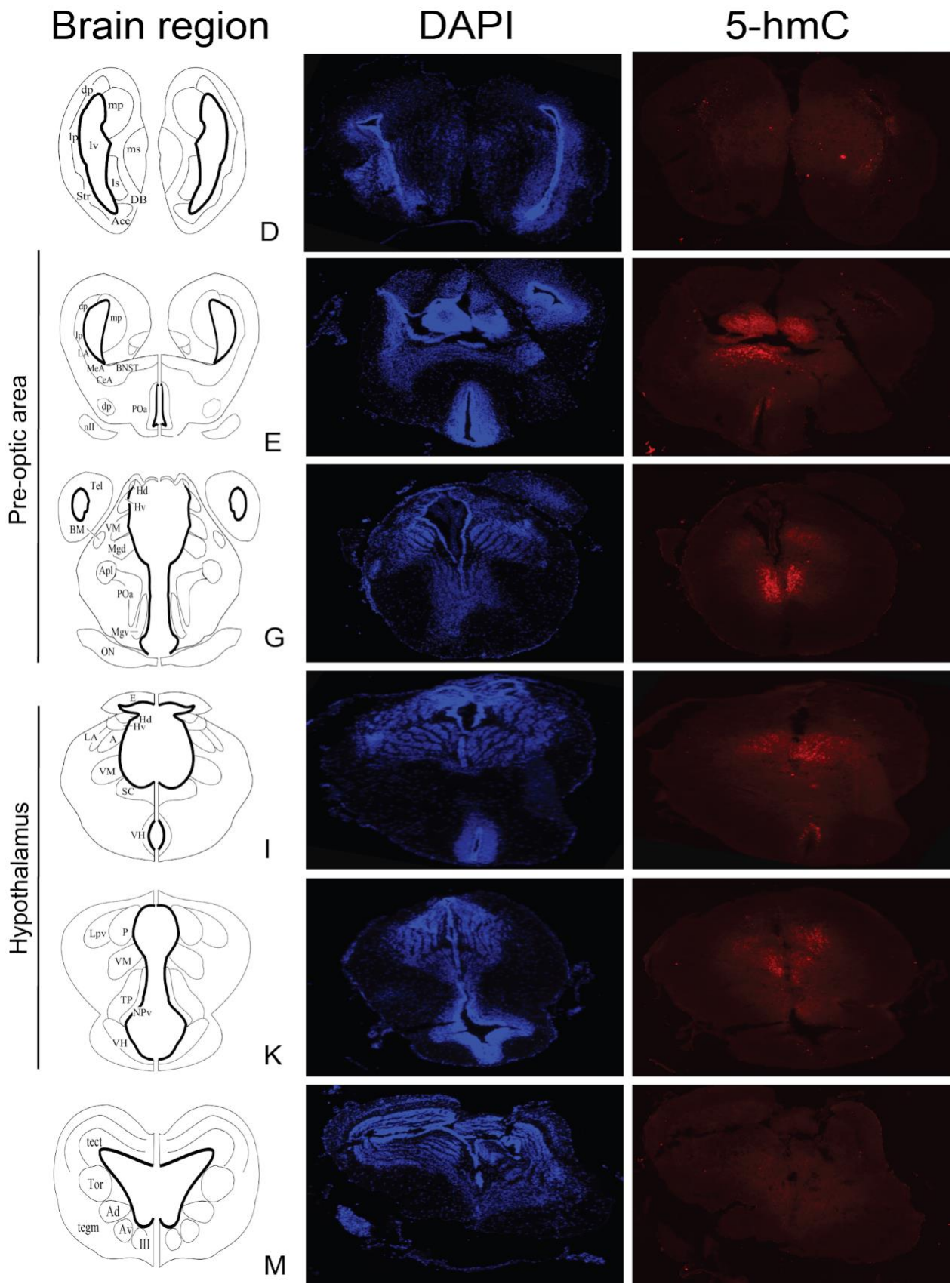

Brain region
DAPI
5-hmC
Pre-optic area
Hypothalamus
dp
mp
lp
lv
ms
ls
Str
DB
Acc
D
LA
MeA
BNST
CeA
POa
nII
E
Tel
Hd
Hv
BM
VM
Mgd
Apl
Mgv
ON
G
A
SC
VH
I
Lpv
P
TP
NPv
K
tect
Tor
Ad
tegm
Av
III
M

Figure. 2.4. Distribution of 5-hmC immunoreactivity in *X. tropicalis* brain at metamorphic climax. Immunohistochemistry for 5-hmC was conducted on 16 µm transverse sections from *X. tropicalis* brain at NF stage 62**.** Shown are rostral to caudal representative images taken at 4X magnification. Three brains were analyzed with similar results. Letters next to schematic diagrams represent the corresponding brain regions shown in Appendix A, Supplemental Fig 2.1.

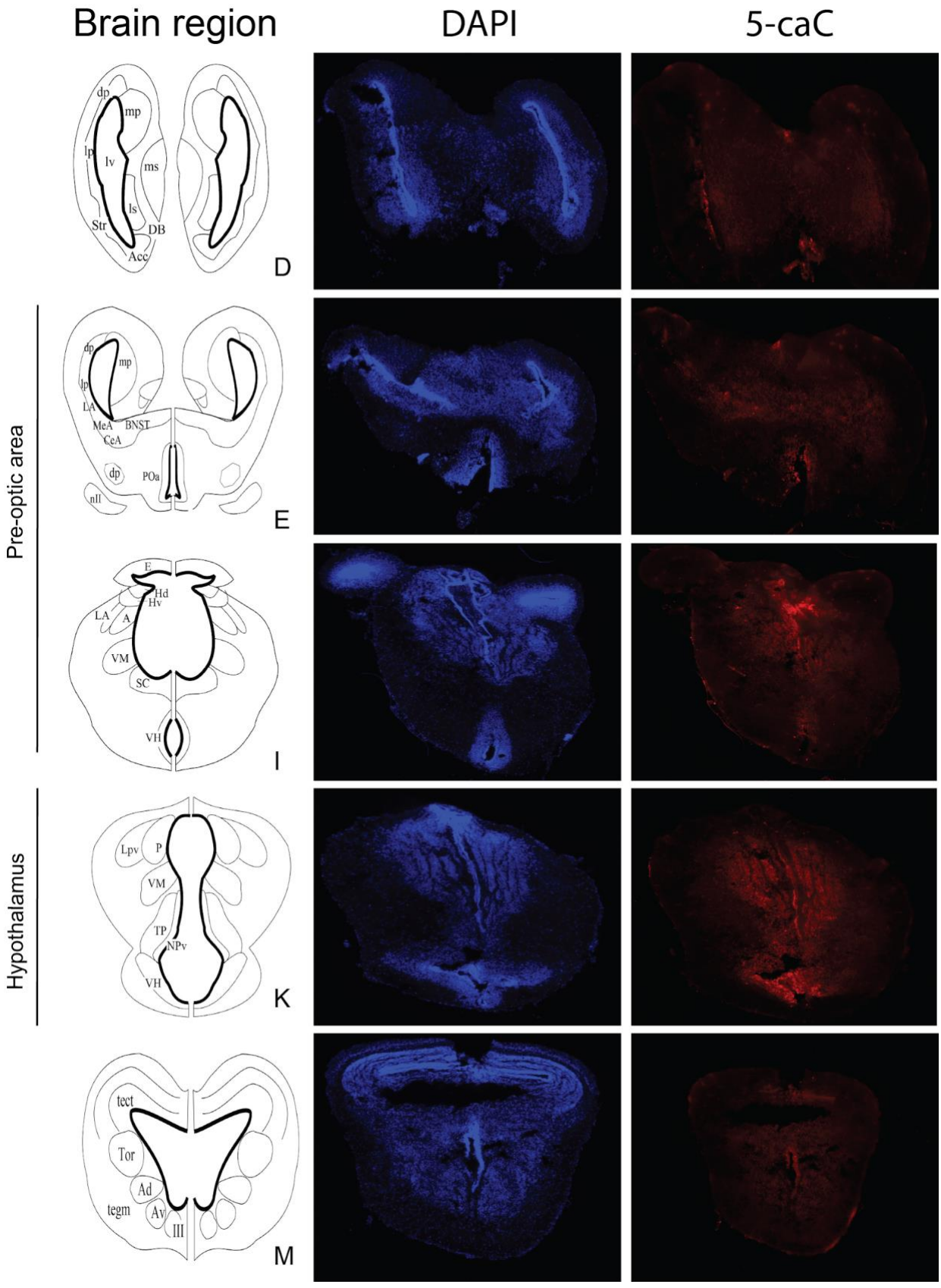

Brain region
DAPI
5-caC
Pre-optic area
Hypothalamus
dp
mp
lp
lv
ms
ls
Str
DB
Acc
D
LA
MeA
BNST
CeA
POa
nII
E
Hd
Hv
A
VM
SC
VH
I
Lpv
P
TP
NPv
K
tect
Tor
Ad
tegm
Ay
III
M

Figure. 2.5. Distribution of 5-caC immunoreactivity in *X. tropicalis* brain at metamorphic climax. Immunohistochemistry for 5-caC was conducted on 16 µm transverse sections from *X. tropicalis* brain at NF stage 62**.** Shown are rostral to caudal representative images taken at 4X magnification. Three brains were analyzed with similar results. Letters next to schematic diagrams represent the corresponding brain regions shown in Appendix A, Supplemental Fig 2.1.

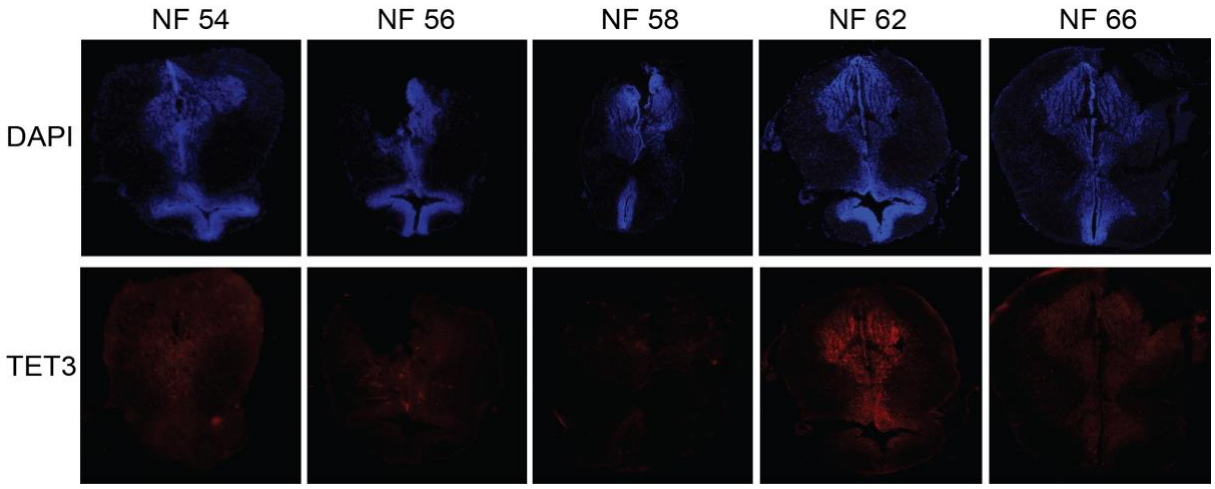


Figure. 2.6. Changes in TET3-ir in *X. tropicalis* tadpole brain during spontaneous metamorphosis. Immunohistochemistry was conducted for TET3 in the region of the tadpole brain containing the thalamic nuclei and ventral hypothalamus (section K in Appendix A, Supplemental Fig 2.1) at different stages of metamorphosis. Shown are representative images taken at 4X magnification illustrating the distribution of TET3-ir (n= 3-4 brains per developmental stage).

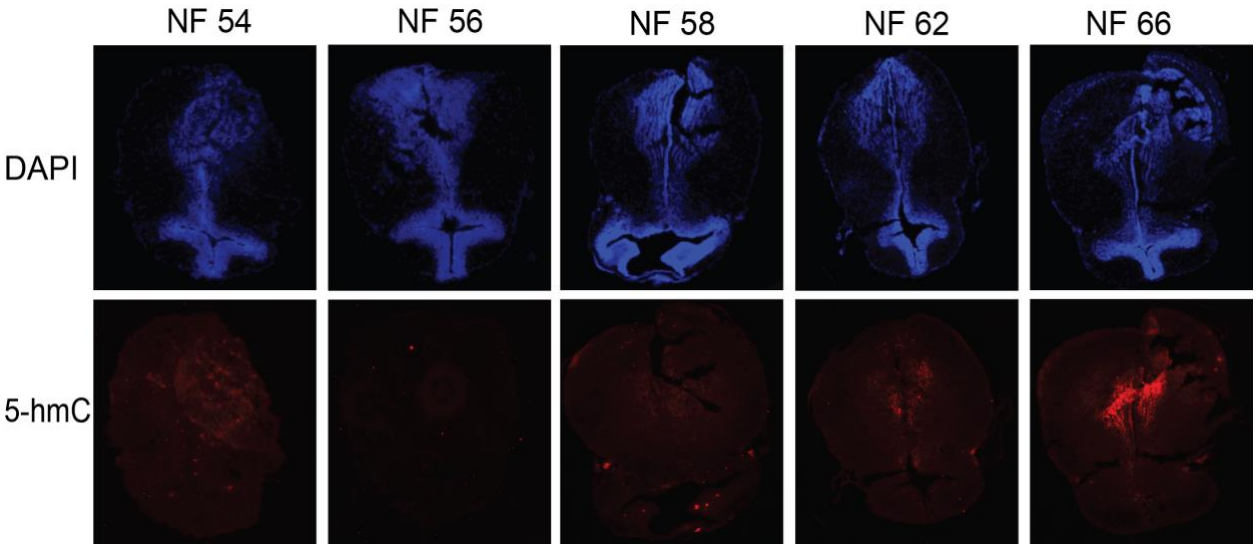


Figure. 2.7. Changes in 5-hmC-ir in *X. tropicalis* tadpole brain during spontaneous metamorphosis. Immunohistochemistry was conducted for 5-hmC in the region of the tadpole brain containing the thalamic nuclei and ventral hypothalamus (section K in Appendix A, Supplemental Fig 2.1) at different stages of metamorphosis. Shown are representative images taken at 4X magnification illustrating the distribution of 5-hmC-ir (n= 3-4 brains per developmental stage).

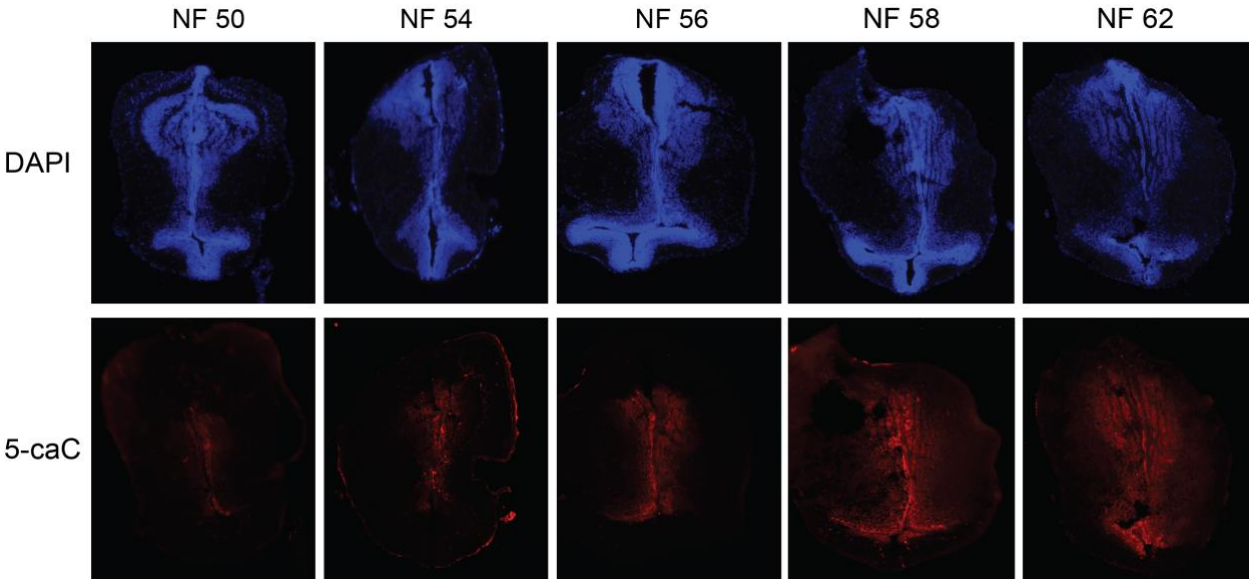


Figure. 2.8. Changes in 5-caC-ir in *X. tropicalis* tadpole brain during spontaneous metamorphosis. Immunohistochemistry was conducted for 5-caC in the region of the tadpole brain containing the thalamic nuclei and ventral hypothalamus (section K in Appendix A, Supplemental Fig 2.1) at different stages of metamorphosis. Shown are representative images taken at 4X magnification illustrating the distribution of 5-caC-ir (n= 3-4 brains per developmental stage).

Table 2.1. Primer sequences

Oligonucleotides used for quantitative real time PCR analysis of gene expression (RT-PCR)

Gene	Primer sequence
ef1a	Forward: CTATCCCCGCCAAACATCT Reverse: CCATCTCAGCAGCTTCCTTC
aid	Forward: TCTACTGCTGGAACACCTTTG Reverse: ATATGCGCCGGAGTTTCC
apobec2	Forward: CCCTGCTTCTTCTTTCATGTTTC Reverse: AATACTTGACCCTCAGGTCTTTC
idax	Forward: TGCCAAAGGTCTGTGTGTC Reverse: TCCTCTGACCTCTAGTGAAGTG
gadd45α	Forward: CTCAATGTGGACCCAGACAA Reverse: CAGGGTGAAGTGGATCTGTAAA
gadd45β	Forward: GACCTCCACTGCATTCTAGTTT Reverse: CCACTGACTCCTGCTTCTATATTC
gadd45γ	Forward: GGAAGAAGTTCACGGACAAGA Reverse: GGGCAGAGACCAATAGTTCAT
idh1	Forward: GGACAGTAACCCGGCATTATAG Reverse: CCTCTTGTCCAGGCAAAGATAG
idh2	Forward: GCACTGGCCACTCTGAAATA Reverse: CATTGGGACTCTTCCACATCTT
idh3a	Forward: GCTAATCCCACTGCTCTTCTT Reverse: CAGAGCCTTCCCAGATTTGAT
tdg	Forward: GGGATCAATCCAGGTCTTATGG Reverse: TCCAGACAAGAACAGACACTTC
tet2	Forward: GGTTACTGCTTGCTTGGATTT Reverse: CACGATTGTCTTCTCTGGTTAAAG
tet3	Forward: ATCTGACATCTCCAACCAAGAG Reverse: GTCCAGAACCCAGATGTGTATAA

Table 2.2

Oligonucleotides used for sub-cloning of *X. laevis* TET3 epitope for TET3 antigen production

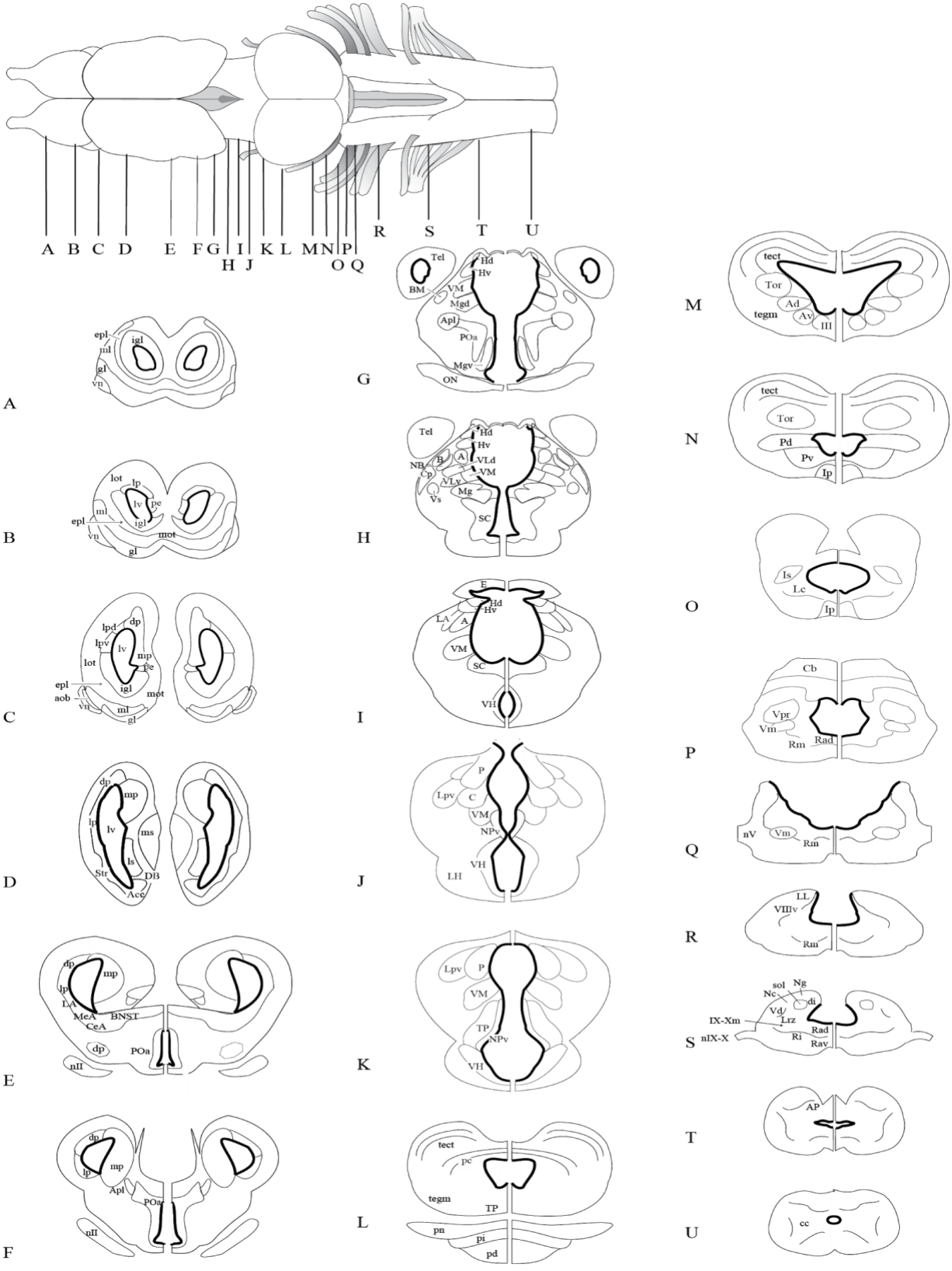
Forward extension	TACTTCCAATCCAATGCTATGGAAGCAAATTCGTGGCTAAGC
Reverse extension	TTATCCACTTCCAATGTTAAGGAAAGGGCAGTTTAAATTGTGGAT

Table 2.3

Oligonucleotides used for quantitative real time PCR analysis of chromatin immunoprecipitation (ChIP) assays

Locus	Primer sequence
pax6	Forward: CCCAGTGCAGTCCTGGTAATA Reverse: GCTCTTCCTTTCAAGCCCC
sox9	Forward: ACGTGAAAGTGGAGCAGTGT Reverse: TCTTCAGCAAAGGCACCCAA
rx	Forward: TGCAGGTACTGTCTCCAACT Reverse: AAAGCAATTCCTGGCCTGTG
actc	Forward: AATGGCCCAGAAGCTACCAA Reverse: TGATTGAATTGGCTGGGTGC
myl2	Forward: TGGGATATTTTACTGAACACAATG Reverse: CGTCCTGTGCCACCTAATG

Appendix A


A B C D E F G H I J K L M N O P Q R S T U
A
epl
igl
ml
gl
vn
B
lot
lp
lv
pe
epl
ml
igl
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gl
C
lpd
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lpv
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MeA
BNST
CeA
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tect
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Pd
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Ip
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Is
Lc
Ip
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Cb
Vpr
Vm
Rm
Rad
Q
nV
Vm
Rm
R
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Rm
S
sol
Ng
Nc
di
Vd
IX-Xm
Lrz
Rad
nIX-X
Ri
Rav
T
AP
U
cc

Supplemental Figure 2.1. Schematic illustration of transverse sections of *Xenopus* brain: The top figure is the dorsal view of the *X. laevis* brain. Letters correspond to the location of sections rostro caudally. The anatomical drawings are from[40].

Abbreviations:

A	anterior thalamic nucleus
Acc	nucleus accumbens
Apl	Amygdala pars lateralis
BST	bed nucleus of the stria terminalis
C	central thalamic nucleus
Cb	cerebellum
CeA	central amygdala
DB	nucleus of the diagonal band of Broca
dp	dorsal pallium
Hd	dorsal habenular nucleus
Hv	ventral habenular nucleus
igl	internal granule cell layer
Ip	interpeduncular nucleus
Is	nucleus isthmi
gl	glomerular layer
La	lateral thalamic nucleus, pars anterior
LA	lateral amygdala
LC	locus coeruleus
LH	Lateral hypothalamus
lmf	lateral motor field of spinal grey
lp	lateral pallium
Lpv	lateral thalamic nucleus, pars posteroventralis
ls	lateral septum
lv	lateral ventricle
ME	median eminence
MeA	medial amygdala
ml	mitral layer
mp	medial pallium
ms	medial septum
NPv	nucleus of the paraventricular organ
nII	cranial nerve II
nV	nervus trigeminus
nIX	nervus glossopharyngeus
nX	nervus vagus
P	posterior thalamic nucleus
pc	posterior commissure
pd	pars distalis
pi	pars intermedia
pn	pars nervosa

POa	preoptic area
Ra	raphe nucleus
Rm	nucleus reticularis medius
SC	suprachiasmatic nucleus
sol	solitary nucleus
Str	striatum
tect	optic tectum
tegm	mesencephalic tegmentum
Tn	tegmental nuclei
Tor	torus semicircularis
TP	posterior tuberculum
VH	ventral hypothalamic nucleus
VLs	superficial ventral nucleus
VM	ventromedial thalamic nucleus
Vm	nucleus motorius nervi trigemini
Vpr	nucleus sensorius principalis nervi trigemini
IXm	nucleus motorius nervi glossopharyngei
Xm	nucleus motorius nervi vagi

Author contributions

I contributed to the work presented herein both experimentally and intellectually. Experimentally, I collected samples, established protocols and performed experiments for figures 2.1-2.8. Samantha Fontana assisted in sample collection and optimization of protocol for histochemistry (Figures 2.4- 2.9). Arasakumar Subramani assisted in purification of the TET3 antigen for xlTET3 antiserum generation.

CHAPTER 3

THYROID HORMONE REGULATES GENES THAT ENCODE ENZYMES THAT CATALYZE DNA DEMETHYLATION IN DEVELOPING XENOPUS TROPICALIS TADPOLE BRAIN

Abstract

Thyroid hormone (T_3) plays a critical role in brain development in vertebrates. The actions of T_3 on multiple physiological, biochemical and metabolic processes are mediated by transcriptional regulation through the T_3 receptor (TR). The identification and characterization of genes directly regulated by TRs are important to understand the molecular mechanisms of T_3 actions. We previously found that the genome of neural cells in *X. tropicalis* tadpole brain undergoes marked DNA demethylation during metamorphosis, and this correlates with developmental increases in genes that code for enzymes that catalyze DNA demethylation. Since most gene regulation programs during tadpole metamorphosis depends on T_3, we investigated whether the DNA demethylation genes are regulated by the hormone, and if so, whether the regulation is direct. We found that exogenous T_3 induced mRNAs for *tet2, tet*3 and *gadd45γ* by 8 hr of treatment in the brain of wild-type pre-metamorphic tadpoles. By contrast, tadpoles deficient for TRα showed elevated baseline mRNA levels, and delayed and lower peak responses to T_3. A genome-wide analysis of TR association in brain chromatin of

metamorphic climax stage tadpoles showed putative TR binding sites within the *tet2, tet3* and *gadd45γ* loci.

Using targeted chromatin immunoprecipitation assays we confirmed that TR associates in chromatin at these putative TREs. Furthermore, we found that TR recruitment to the regions of the *tet2* and *gadd45γ* TRE regions was increased upon T_3 treatment of pre-metamorphic tadpoles. Analysis of histone modifications at two putative TREs within *tet2 and gadd45γ* showed that T_3 induces nucleosome repositioning, as evidenced by a decrease in histone 3, and an increase in acetylated histone 3, both hallmarks of the presence of functional nuclear receptor interactions in chromatin. These findings support that T_3 can induce expression of genes involved with DNA demethylation in the tadpole brain tadpole metamorphosis, and that this regulation may be direct for some genes (e.g., *tet2* and *gadd45γ*).

Introduction

Thyroid hormone (T_3) has long been known to play an important role in normal development and physiology of vertebrates[1–3]. Particularly in the brain, T_3 is known to be essential for development of neurogenesis, Purkinje cells, dendrite formation, neuronal migration and myelination [4–6] . A lack of T_3 in the early stages of neurogenesis can lead to a condition of severe mental retardation and deafness in humans called cretinism[7]. Despite understanding the importance of T_3 in neural development in humans, investigating the underlying mechanisms of T_3 action in the mammalian brain development is challenging. This is partly due to the confounding effects of maternal T_3 and the difficulty in manipulating the mammalian fetus *in utero.* In amphibians, T_3 is well known to be necessary and sufficient to induce tadpole metamorphosis[8]. Additionally, amphibian metamorphosis bears several molecular and morphological similarities to post-embryonic development of mammals[9], making it an excellent model to study the molecular mechanisms of T_3 action.

Thyroid hormone regulates the suite of physiological, biochemical and morphological changes by regulation of target genes, where T_3 binds to specific T_3 receptors (TR) that function as ligand-activated transcription factors, which can either activate or repress target genes. Two evolutionarily-conserved TRs, TRα and TRβ, have been identified in vertebrates[10–13]. Expression of TRα in tadpoles is ubiquitous and starts right after hatching, and its level remains constant throughout tadpole metamorphosis. By contrast, TRβ expression is low before pre-metamorphosis and increases dramatically during pro-metamorphosis in parallel with rising plasma T_3 concentrations[14–16], which is due to TRβ being a direct T_3 response gene[16–18].

The TRs function mainly as heterodimers with retinoic X receptor (RXR) by binding to thyroid hormone response elements (TREs) of direct T_3 response genes. Most TRE sites are characterized by two direct repeats of the hexanucleotide half sites separated with a short spacer sequence. The functional TREs predominantly exist as a direct repeat with a spacing of four nucleotides between the half sites (DR+4), while they can also exist as everted repeat and inverted repeats with spacing of one to six nucleotides between the half sites. The TREs may be located in gene promoters, within the body of the gene or several kilobases away from the regulated gene[12,19].

Chromatin of eukaryotic cells is characterized by nucleosomes that are composed of DNA wrapped around four core histones (H2A, H2B, H3 and H4). The histones undergo several posttranslational modifications, including acetylation, methylation, phosphorylation, and ubiquitylation[20], which in turn influence gene transcription. The closed and compact heterochromatin is characterized by di- or tri-methylation of the lysine residues on H3 (H3K9me2, H3K9me3, H3K27me3) while euchromatin is associated with activation marks such as acetylation of H3 and H4 (AcH3 and AcH4) or methylation of 4th lysine on H3 (H3K4me2, H3K4me3)[21].

The mechanisms of TR mediated gene regulation are best understood as the 'dual function model' that has received substantial experimental support[22,23]. According to this model, in an unliganded state (absence of hormone), TR-RXR complexes bind to TREs of direct target genes, recruit co-repressors such as nuclear co-repressor (NcoR) or silencing mediator of retinoid and thyroid hormone receptor (SMRT) that in turn recruit histone deacetylases (HDACs) to create a compact, inaccessible chromatin structure leading to repression of the target gene[24]. Upon ligand (T_3) binding, TR-RXRs

exchange co-repressors for co-activator complexes like the Steroid receptor coactivator (SRC) /p160 family of proteins that either possess an intrinsic histone acetyltransferases activity or recruit other HATs like CBP/p300 and PCAF to the locus, thus generating an open local chromatin resulting in gene activation[12,25,26].

Microarray analyses in *Xenopus* have identified potential direct T_3 target genes that were enriched in categories important for transcriptional regulation and protein degradation-dependent signaling processes[27]. Given the pivotal role of T_3 in orchestrating a host of molecular, biochemical, and morphological changes by regulating gene expression programs during development, immediate early, direct T_3 target genes of TR likely play crucial roles in inducing the effects of T_3. Identifying the early and direct target genes of T_3 is thus important in understanding the molecular mechanisms of T_3 action during development [9,28,29].

Another important epigenetic modification influencing gene transcription is the methylation of cytosine residues in DNA, typically leading to repression of gene transcription by blocking the binding of transcriptional activators[30]. By contrast, removal of methylation from cytosine, or DNA demethylation is typically associated with transcriptional activation of genes. Active DNA demethylation is a co-ordinated process involving a suite of enzymes and occurs independently of DNA replication[31,32]. Although the roles of liganded TR in regulating chromatin and histone modifications have been extensively studied, the role of T_3 in modulating DNA methylation is still poorly understood.

We previously observed increases in mRNA levels of genes that code for enzymes that catalyze DNA demethylation in the region of the preoptic

area/hypothalamus of *X. tropicalis* tadpole brain during spontaneous metamorphosis (Chapter 2). We hypothesized that T_3 modulates DNA demethylation in the developing tadpole brain by direct transcriptional regulation of genes that encode enzymes catalyzing DNA demethylation. In the current study we investigated T_3 regulation of genes that encode enzymes involved in DNA demethylation.

We used the following criteria to support that a gene was a direct target of liganded TRs: a) Rapid kinetics of mRNA induction in pre-metamorphic tadpole brain upon exogenous T_3 treatment (i.e., within the first 8-16 hr after addition of T_3, when most direct T_3 response genes are activated *in vivo*;[33,34]. b) The presence of one or more TREs within 5 kb of the transcription start site (TSS) (upstream, downstream and within the body of the gene) identified by a TR ChIP-seq experiment (Raj.S, unpublished data), and identification of putative DR+4 TREs at sites of TR association. c) Confirmation by targeted ChIP assays of enhanced TR association in brain chromatin at putative TRE regions in metamorphic climax stage tadpoles (NF stage 62), when circulating T_3 and TR expression are highest (compared with pre-metamorphic tadpoles, when circulating T_3 and TR expression are low), or following T_3 treatment of pre-metamorphic tadpoles (which induces *trb* transcription, increasing the amount of TR in the cell, and promoting TR recruitment to chromatin). d) Evidence that T_3 treatment of pre-metamorphic tadpoles causes a decrease in H3 (i.e., evidence of nucleosome repositioning) and an increase in AcH3 (evidence of recruitment of HATs) at genomic regions of putative TREs (analyzed by targeted ChIP assays). e) Evidence that the genomic region containing a putative TRE(s) can support T_3-dependent transcription in transient transfection/reporter assays.

Materials and methods

Animal care and T_3 treatment of animals

We obtained wild type (WT) and TRα knockout (TRα KO) *Xenopus tropicalis* tadpoles by in-house breeding, reared them in dechlorinated tap water (25 °C, pH 7) and maintained them at 13L:11D photoperiod. We used homozygous TRαKO animals generated by[22] to obtain TRαKO tadpoles used in experiments. Tadpoles were fed *ad libitum* with pulverized frog brittle powder (NASCO, Fort Atkinson, WI) or with sera micron. Developmental stage of the tadpoles was assigned using the normal table of Nieuwkoop and Faber (NF) [35]. All procedures involving animals were conducted under an approved animal use protocol (PRO00006809) in accordance with the guidelines of the Institutional Animal Care and Use Committee at the University of Michigan.

For gene expression and chromatin immunoprecipitation (ChIP) analyses, we housed WT or TRαKO pre-metamorphic (NF stage 50-54) tadpoles in aquaria with two liters of water 24 hr prior to hormone treatment. We added T_3 (3,5,3′-L-triiodothyronine; T_3 sodium salt; Sigma-Aldrich, St. Louis, MO) to the rearing water (first dissolved in NaoH at 500 µM) to a final concentration of 5 nM T_3 for different times. For treatments that extended beyond 24 hr we changed the rearing water and replenished the T_3 at 24 hr after the treatment was initiated. We sacrificed the tadpoles by rapid decapitation, and microdissected the preoptic area/diencephalon region (for RTqPCR) or whole brain (for ChIP assay). Brains were snap frozen in liquid nitrogen and stored at -80 °C until RNA or chromatin extraction.

RNA extraction and reverse transcriptase quantitative PCR (RT-qPCR)

For mRNA analyses we pooled two brains per replicate from either WT or TRα KO animals treated with or without T_3, and isolated total RNA using the TRIZOL reagent (Invitrogen Life Technologies, Carlsbad, CA) according to the manufacturer's protocol. We removed genomic DNA by treating 1 µg of total RNA with 20 units of DNase (Promega # M6101) and generated cDNA with the High Capacity cDNA Synthesis Kit (Applied Biosystems Inc. (ABI), Foster City, CA). We diluted the cDNA 1:4 with water and used 2 µL as template in a 20 µL total qPCR reaction using SYBR mix (Innovative solutions # 4SPB20) and the Fast 7500 Real-Time PCR System (ABI) or StepOne Real Time PCR Systems (Life Technologies). We used a relative quantification method (Crespi and Denver 2006, Yao, Stenzel-Poore, and Denver 2007) to compare mRNA levels by generating standard curves for each gene using pooled cDNA. We normalized all mRNA quantities to the mRNA level of the reference gene elongation factor 1α (ef1α), which did not change during metamorphosis or following T3 treatment (data not shown). The sequences of the oligonucleotides used as primers in qPCR are given in Table 3.1.

Chromatin immunoprecipitation (ChIP) assays

We prepared chromatin from the whole brain of untreated tadpoles at metamorphic climax (NF stage 62; 5 brains pooled per replicate) or pre-metamorphic tadpoles (NF stage 50-52; ~10 brains pooled per replicate) treated with or without 5 nM T_3 for 24 and 48 hr. We sheared the chromatin using a Covaris M220 ultrasonicator (Covaris, Woburn, MA) for 20 min (pre-metamorphic) or 30 min (metamorphic climax) at peak power 75 W, duty factor 8 and 200 cycles to obtain shared chromatin fragments of ~250-400 bp. We quantified the sheared chromatin using a Nanodrop and conducted

ChIP assay on 5 µg of total chromatin for immunoprecipitation reactions, and 5-50 ng of chromatin for input reactions in a 500 µL reaction volume as previously described[36,37]. We used the following primary antibodies for ChIP assays: a rabbit polyclonal antiserum raised against the full-length *X. tropicalis* TRβ (PB antiserum, which recognizes both TRα and TRβ; 5 µl; gift of Laurent Sachs), anti-histone 3 (H3) (5 µl; Millipore, Billerica, MA; #07-670), or anti-acetylated H3 (AcH3) (5 µl; Millipore #06-599) (Table 3.5). We used normal rabbit serum (NRS) as control. We analyzed the precipitated DNA by real-time qPCR using SYBR Green assays.

Plasmid constructs and cell transfection/reporter assay

We generated luciferase reporter constructs with PCR-generated DNA fragments corresponding to genomic regions containing predicted *tet2* TREs for analysis in transient transfection assays. We sub-cloned 610-bp DNA fragments corresponding genomic regions of *tet2* TRE into pGL4.23 vector at the XhoI and HindIII sites. Primer sequences and sequence of the cloned fragment are in Table 3.3-3.4.

For reporter assays, we plated approximately 250,000 N2a [trb1] cells (a mouse neuroblastoma cell line derived from a spontaneous brain tumor of a strain A albino mouse that were engineered to stably express human TRβ1[38] per well of a 12 well cell culture plate in DMEM/F12 medium (Invitrogen); supplemented with penicillin G (100 units/mL), streptomycin sulfate (100 µg/mL), hygromycin B and 10% fetal bovine serum (FBS) that had been stripped of T_3[39]. Sixteen hr after plating, we transfected cells with 400 ng of reporter plasmid or empty vector using Fugene 6 (Promega) according to the manufacturer's protocol. About 24 hr after transfection, we treated the cells with vehicle

(0.01% DMSO) or 30 nM T_3 for 12 hr, harvested the cells for RNA and DNA using the TRIzol reagent (Life technologies) according to the manufacturer's protocol. We used 500 ng of RNA to synthesize cDNA for RTqPCR, then quantified the firefly luciferase and Renilla luciferase mRNAs using RTqPCR.

ClustalW alignment of putative *Xenopus tet2* and *gadd45γ* TREs

The sequence of genomic regions containing putative TREs identified by ChIP-seq within the *X. tropicalis tet2* and *gadd45γ TREs* (see Table 3.6 for genomic coordinates) was blasted (NCBI megablast) against the *Xenopus laevis* (taxid:8355) and *Xenopus tropicalis* (taxid:8364) genomes from the RefSeq Genome Database (refseq_genomes). Coordinates from the resulting alignments were used to obtain genomic sequence (extending 500 bp in the 3' direction, all alignments were in the same orientation). The sequences were downloaded in fasta format and used as input for ClustalW (v2.1) analysis, run using the Adoma (v1.0) package. The resulting Adoma-processed ClustalW alignment was modified to include chromosomal positions and the putative TRE sites.

Data analysis and statistics

We used SigmaPlot statistical software (version 13; Systat Software, San Jose, CA) for data analyses. We conducted one-way ANOVA followed by Fisher's least significant difference (Fisher's LSD) *post hoc* analysis or Student's independent sample *t*-test on data that were Log10-transformed before statistical analysis. We used the sequence analysis program 'NHR scan'[40] to identify putative DR+4 TREs within a genomic sequence. A multiple linear regression model was created in an attempt to model

the relationships between the response variable (reference gene-normalized mRNA levels [*ef1α*]), and two explanatory variables (genotype and time), while allowing for a genotype:time interaction factor. The R packages lme4 v1.1-17 and effects v4.0-1 were used.

Results

Exogenous T_3 induces genes involved with DNA demethylation in pre-metamorphic tadpole brain.

Pre-metamorphic *Xenopus* tadpoles respond to exogenous T_3 by rapid induction of T_3 target genes like *klf9, trb,* and *th/bzip*, among others[33,34,37,41,42]. We treated WT and TRαKO pre-metamorphic tadpoles with T_3 for different times, then analyzed changes in mRNAs for genes involved with DNA demethylation in the preoptic area/diencephalon (Fig 3.1).

The mRNA for *trb*, a known direct T_3 response gene which we used as a positive control, was induced by 8 hr T_3 treatment in WT animals and increased through 36 hr of continuous T_3 exposure. In TRαKO animals, the baseline *trb* mRNA was elevated compared with WT animals, consistent with the gene being de-repressed by the loss of TRα, as has been shown previously[22]. The *trb* mRNA was elevated after 8 hr T_3 treatment, and continued to increase through 36 hr, although the kinetics (i.e., the slope of the response curve) was significantly slower than in WT animals (adjusted R^2=0.8033, p=1.445e-12). The slower *trb* kinetics in TRαKO animals is hypothesized to be due to the initial lack of sufficient TRs (i.e., TRα) to mediate the T_3 response, which is subsequently compensated for by the auto-induction of *trb*[22].

The mRNAs for *tet2, tet3 and gadd45γ* were induced at 8 hr of treatment, suggesting that the immediate early response may be due to direct liganded TR action (Fig 3.1). The mRNA level of *tet2* in WT animals increased after 8 hr of T_3 treatment, continued to increase up to 16 hr and remained elevated at 24 and 36 hr (Fig. 3.1 top right panel). In TRαKO animals, the baseline transcription of *tet2* was higher than that of WT animals, suggesting a de-repression of the gene (adjusted R^2=0.5468, p=6.181e-06). Additionally, the mRNA level of *tet2* in TRαKO animals remained unchanged and was similar to vehicle-treated animals at all time points (Fig. 3.1 top right panel), suggesting that *tet2* is likely a direct TRα-regulated gene.

In WT animals, *tet3* mRNA levels increased after 8 hr of T_3 treatment, continued to increase up to 16 hr and remained elevated at 24 and 36 hr (Fig. 3.1 middle left panel). In TRαKO animals, the baseline *tet3* mRNA was elevated compared with WT animals, consistent with the gene being de-repressed by the loss of TRα. The *tet3* mRNA remained unchanged after 8 hr T_3 treatment, showed an increase at 16 hr and continued to increase through 36 hr (Fig 3.1 middle left panel) although the kinetics (i.e., the slope of the response curve) was significantly slower than in WT animals (adjusted R^2=0.5088, p=2.34e-05).

The *gadd45γ* mRNA showed a rapid, 2.5-fold increase at 8 hr of T_3 treatment in WT animals and remained elevated at 16, 24 and 36 hr of treatment (Fig. 3.1 bottom left panel). In TRαKO animals, the baseline *gadd45γ* mRNA was similar to that of WT animals, was unchanged after 8 hr T_3 treatment, then increased at 16 hr and continued to rise through 36 hr. However, the kinetics of *gadd45γ* mRNA induction (i.e., the slope

of the response curve) was significantly slower than in WT animals (adjusted R^2=0.8046, p=1.19e-11) (Fig 3.1 bottom left panel).

The *tdg* mRNA was induced at 16 hr of T_3 treatment in both WT and KO animals, and remained elevated through 36 hr of T_3 treatment (Fig 3.1 middle right panel). There was no change in the baseline *tdg* mRNA level between WT and KO animals.
The *gadd45β* mRNA level increased at 16 hr of T_3 treatment and remain elevated at 24 and 36 hr in WT animals. The baseline mRNA *gadd45β* level was elevated in TRαKO compared with WT tadpoles, and was unchanged after T_3 treatment, suggesting that *gadd45β* may be a direct TRα-regulated gene (adjusted R^2=0.4069, p=0.003006) (Fig. 3.1 bottom right panel).

The baseline mRNA levels for *gadd45α*, *idh1*, *idh2* and *idh3a* genes were unaffected by genotype, and were unchanged after T_3 treatment (data not shown). The mRNA levels of *gadd45α*, *idh1*, *idh2* and *idh3a* genes did not change with T_3 treatment at any time point in WT animals (Data not shown).

Identification of TR association in chromatin around the genes involved with DNA demethylation

We conducted ChIP sequencing to identify genome wide association of TRs in chromatin in *X. tropicalis* tadpole whole brain at metamorphic climax (genomic coordinates of identified peaks provided in appendix D). We validated the ChIP-sequencing results using targeted TR-ChIP assay for ~15 representative peaks identified by ChIP-sequencing (Data of all identified peaks in Appendix D).

We analyzed data from the TR ChIP-seq experiment to identify peaks of TR association within the gene body, 5 kb upstream and downstream of TSS of the genes involved in DNA demethylation. We identified a TR peaks in the 5' untranslated region (UTR) of *tet2* (*tet2* TRE; Fig 3.2, top right panel), 1.8 kb upstream of TSS and the first exon of *gadd45γ* (*gadd45γ* TREs; Fig 3.2 middle left panel), and within the first intron of *tet3* (*tet3* TRE; Fig 3.2 middle right panel). Figure 3.2 also shows *trb* TRE (positive control locus, top left panel), *trb* exon 5 and *ifabp* (negative control loci; bottom panel)

Identification of putative T_3 response elements in genes involved with DNA demethylation

We analyzed the genomic regions of TR association within the *tet2, gadd45γ* and *tet3* genes computationally for putative TREs, particularly DR+4 TREs. We found that the *X. tropicalis tet2* TRE contains two putative DR+4 TREs (TRE-A and TRE-B, Fig. 3.3 A) and the *gadd45γ* TRE (1.8 kb upstream of the TSS) contains two putative DR+4 TREs (TRE-A and TRE-B, Fig. 3.3 B). We did not find any TREs within the *tet3* TRE region (data not shown). We hence chose *tet2* and *gadd45γ* TREs for further analysis. Using BLAST, we identified homologous regions of the *tet2* TRE and the *gadd45γ* TREs in the *X. laevis* genome, then used ClustalW program to align with the *X. tropicalis* sequence. We found that TRE-A of the *tet2* TRE and both TRE-A and TRE-B of the *gadd45γ* TRE regions were conserved between the two frog species (Fig. 3.3 A, B).

Functional analysis of two putative TREs at the *X. tropicalis tet2* and *gadd45γ* locus

We validated the TR peak within the *tet2* and *gadd45γ* TREs locus identified by TR ChIP-seq using targeted ChIP qPCR analysis on whole brain chromatin from metamorphic climax stage (NF stage 62) *X. tropicalis* tadpoles. We found statistically significant ($p<0.05$) enrichment of TR signal over pre-immune serum at the t*et2 and gadd45γ* TRE regions, but not at the negative control region, the *ifabp* promoter (Fig. 3.4 A). We also conducted targeted ChIP qPCR analysis for TR association at the putative *tet2* and *gadd45γ* TREs using whole brain chromatin isolated from pre-metamorphic *X. tropicalis* tadpoles treated with or without T_3 for 24 and 48 hr. We found that treatment with T_3 increased the TR ChIP signal at the *tet2* TRE at 48 hr but not at 24 hr and both 24 and 48 hr at the *gadd45γ* TRE (Fig 3.4B). We did not see an increase in TR ChIP signal between treatments at both time points at a negative control region, *ifabp* promoter (Fig. 3.4 B). We also found enrichment of TR signal over pre-immune serum at the *tet3 TRE* regions identified in Fig 3.2 (Appendix B Fig. 1).

T_3 treatment of pre-metamorphic tadpoles causes chromatin modifications at the region of the predicted *tet2* and *gadd45γ* TREs

To further characterize the putative *tet2* and *gadd45γ* TREs, we conducted ChIP qPCR assay using antibodies against H3 and AcH3 on brain chromatin isolated from pre-metamorphic tadpoles treated with or without T_3 for 12 or 24 hr. Treatment with T_3 caused a reduction in the amount of H3 at the *tet2* TRE region at both time points (Fig 3.5 A), which is consistent with liganded TR inducing nucleosome repositioning at this region. T_3 treatment caused a statistically significant ($p<0.001$) increase in AcH3 (normalized to H3) at the *tet2* TRE at 12 hr; the mean AcH3/H3 was higher at 24 hr but

was not statistically significant (Fig. 3.5 B). At the *gadd45γ* TRE, we observed a significant increase in AcH3 (normalized to H3) at 24 hr (Fig 3.5 C) There was no effect of T_3 on H3 or AcH3 levels at the negative control region *ifabp* promoter (Fig 3.5 A,B).

To test for functionality of the putative *tet2* TRE, we conducted transient transfection-reporter assays in N2a[*trb*1] cells using luciferase reporter constructs containing DNA fragments corresponding to the *X. tropicalis tet2* TRE region (pGL 4.23-*tet2* TRE A + TRE B; see Appendix B for the DNA sequence of the cloned fragment). Treatment with T_3 caused an increase in firefly luciferase mRNA levels in cells transfected with pGL 4.23-*tet2* TRE A + TRE B construct, while transfection with empty vector (pGL 4.23) showed no change in the firefly luciferase mRNA level (Fig. 3.5 D), suggesting that the *tet2* TRE region supports T_3-dependent transactivation.
We conducted transient transfection-reporter assays in using luciferase reporter constructs containing genomic fragments corresponding to the *X. tropicalis gadd45γ* and TRE regions (pGL 4.23-*gadd45γ* TRE A + TRE B). No significant difference in mRNA levels of the luciferase gene in cells transfected with the construct was observed between treatments (data not shown).

Discussion

Here we show that genes that code for enzymes critical for active DNA methylation, *tet2*, *tet3* and *gadd45γ* are under the control of T_3 in developing tadpole brain. The expression of genes *tet2*, *tet3*, *gadd45γ*, *tdg* and *gadd45β* can be induced in early pre-metamorphic tadpole brain upon T_3 treatment. Particularly, *tet2*, *tet3* and *gadd45γ* show very rapid kinetics of T_3 induction in WT animals with a delayed and

lowered response in TRαKO animals. Furthermore, we provide strong evidence that the genes *tet2* and *gadd45γ* are directly regulated by liganded TRs via at least two TREs each. We hypothesize that T_3 regulation of these genes plays a central role in T_3 action via the regulation of DNA methylation patterns in tadpole tissues during metamorphosis.

The role of T_3 in the vertebrate brain development has been known to be indispensable. Particularly in amphibian metamorphosis, the brain undergoes several morphological and physiological changes, most of which are regulated by T_3[43]. Thyroid hormone mediates these changes by direct or indirect regulation of target genes. Recent work from the Denver Laboratory has shown that *de novo* DNA methyltransferase (*dnmt3a)* is a direct T_3 target gene in *Xenopus*, through which T_3 plays a key role in modulating DNA methylation[44,45] a key epigenetic modification that alters chromatin structure and hence, gene transcription. In our previous work, we found that the *X. tropicalis* tadpole brain undergoes significant DNA demethylation during metamorphosis (Chapter 2). Here, we have worked on testing the hypothesis that T_3 modulates DNA demethylation in the developing tadpole brain by direct transcriptional regulation of genes that encode enzymes catalyzing DNA demethylation in *X. tropicalis* tadpole brain.

We tested T_3-dependent regulation of genes involved in the active DNA demethylation pathway (*tet2, tet3, gadd45α, gadd45β, gadd45γ, tdg, idh1, idh2* and *idh3a*). These genes exhibited transcriptional upregulation during metamorphosis in parallel with circulating T_3 levels in WT *X. tropicalis* tadpoles (Fig. 2.1). We found that WT pre-metamorphic tadpoles showed a transcriptional upregulation of of *trb*, *tet2, tet3* and *gadd45γ* upon addition of T_3 to the rearing water as early as 8 hr, suggesting that

the rapid kinetics of mRNA induction is potentially due to direct liganded TR action[33,34,37,41,42]. However, in the TRαKO animals, a delayed response in T_3-dependent transactivation was observed where the mRNA levels *tet3* and *gadd45γ* were induced at 16 hr of T_3 treatment. Additionally, the fold changes of mRNA levels upon T_3 treatments at all time points tested were lower than that of WT animals. We hypothesize that delayed T_3-dependent response of these genes in TRαKO animals is due to their requirement of *trb* autoinduction to respond to T_3 (Fig 3.1 A). The dependence on *trb* autoinduction (genes don't respond until *trb* is induced at 16 hr) seems to be true for *trb* itself, *tet3*, and *gadd45γ*. However, *tet2* appears to be a TRα target gene for which *trb* cannot compensate.

The delayed T_3-dependent response of *tdg* and *gadd5γ* may be due to them being indirect T_3 response genes or direct genes with delayed kinetics, or they may require *trb* for their induction, which will have to be experimentally determined. Even though expression of the two TR receptors is tissue and developmental stage specific where TRα is mainly expressed at embryonic development, and TRβ expression begins later in development[46], both receptors are expressed in the vertebrate brain, including *Xenopus* tadpoles[47,48] suggesting that TRα and TRβ might regulate the same gene.

Consistent with our results, Wen and colleagues analyzed T_3-mediated TRβ expression during embryonic development in WT and TRαKO *X. tropicalis* tadpoles and found that the induction of *trb* mRNA in WT animals was about 10 fold with 18 hr of T_3 treatment, while the degree of increase was substantially lower in TRαKO animals. The group also found similar patterns of expression of some of the other known direct T_3 target genes like *klf9, th/bzip* and *ST3*[22]. In addition to this, they also found significantly

less TR association at the TRE of the *trb* gene in TRαKO animals compared to WT. However, they detected significant TR association above background levels at the *trb* TREs in TRαKO animals. This is likely due to wild-type TRβ present at the TREs (the anti-TR antibody used in ChIP assay identifies both TRα and TRβ proteins). These results, along with the T_3-mediated gene induction profile of *tet2, tet3* and *gadd45γ* suggest that, the direct T_3 response genes could be targets of both TRα and TRβ. The reduced level of T_3-mediated mRNA induction of these genes in TRα mutants is likely due to a combination of absence of TRα leading to lower levels of TRβ autoregulation and expression.

Identifying TR association around potential direct T_3 target genes using ChIP assay is another experimental approach to further T_3 response genes[37,49]. Using ChIP-sequencing and assays we identified TR association in the chromatin at regions within 5 kb of potential T_3 target genes: *tet2, tet3* and *gadd45γ* in WT *X. tropicalis* at metamorphic climax. We identified putative DR+4 TREs within the TREs of *tet2* and *gadd45γ* and also provide evidence for conservation of *tet2* and *gadd45γ* TREs in both species of *Xenopus*: *X. tropicalis* and *X. laevis*.

Using targeted ChIP we identified an increase in TR recruitment to chromatin at the *tet2* and *gadd45γ* TREs. We also found that exogenous T_3 treatment can enhance TR association within the *tet2* and *gadd45γ* TREs. This is due to (a) TRβ being a direct T_3 response gene, hence providing more TR protein for recruitment at the TREs upon treatment with T_3[34] or (b) liganded TR induces open and accessible local chromatin environment, thus facilitating further TR recruitment to the TREs[50] or a combination of both (a) and (b). We also saw enrichment for TR ChIP signal at the exon regions of

gadd45γ gene. Whether the genomic regions of TR peaks at this region bonafide TREs is yet to be identified.

We further characterized the TREs of *tet2* and *gadd45γ,* by conducting ChIP assays for H3 and AcH3. It has been reported *in vitro* that the binding of TR to a single location, independent of the number of TRE present there, leads to the loss of up to three nucleosomes[51] and that liganded TR can recruit chromatin remodeling complexes to TREs[52,53]. Furthermore, *in vivo* reports in *Xenopus* provide evidence liganded TR induces nucleosomal removal and an increase in histone marks that are associated with increased gene expression at TREs of known T_3 target genes *trb* and *th/bzip*[50]. Consistent with these results, we have shown that liganded TR induces reduction in H3 enrichment and an increase in enrichment of acetylated H3 at the TREs of *tet2* and *gadd45γ* genes. We also provide evidence of functionality of *tet2* TREs using reporter assays.

However, association of TR around potential T_3 target genes provides no evidence of the functional connection between the TR binding sites and the target genes, as functional TREs can be located several kilobases away from the gene[44]. Furthermore, recent work discovered transcription factors including nuclear hormone receptors like androgen receptor and TR can act exert their effect over large distances in the genome through DNA looping[37,54,55]. This mechanism of long-range chromosomal interaction could perhaps explain that in spite of TR enrichment within the *tet3* locus, we did not find any putative DR+4s nor did the TET3 genomic region corresponding to TR association show T_3-dependent transactivation in reporter assays (data not shown). The TR signal observed within the *tet3* locus could just be random, non-specific association

of TR to the chromatin due to long range chromosomal looping. To address this, genome editing techniques like CRISPR/*cas9* will have to be utilized *in vivo* to mutate the predicted TREs, eliminate TR recruitment and then analyze regulation of the hypothesized gene. Another approach is to use chromatin interaction analysis by paired-end tags sequencing (ChIA-PET) assay to identify map genome-wide TR association and to link them with their target promoter [37,56,57]

In conclusion, we show that liganded TR directly activates transcription of *tet2*, and *gadd45γ*, and this activation could be mediated both by TRα and TRβ receptors. We also provide evidence suggesting that *tet2* and *gadd45γ* TRE regions are bonafide functional TREs with two DR+4 TREs each in *X.tropicalis*. This suggests a novel mechanistic role for T_3 in modulating global patterns of DNA methylation in the developing brain, by direct transcriptional regulation of genes involved in DNA demethylation.

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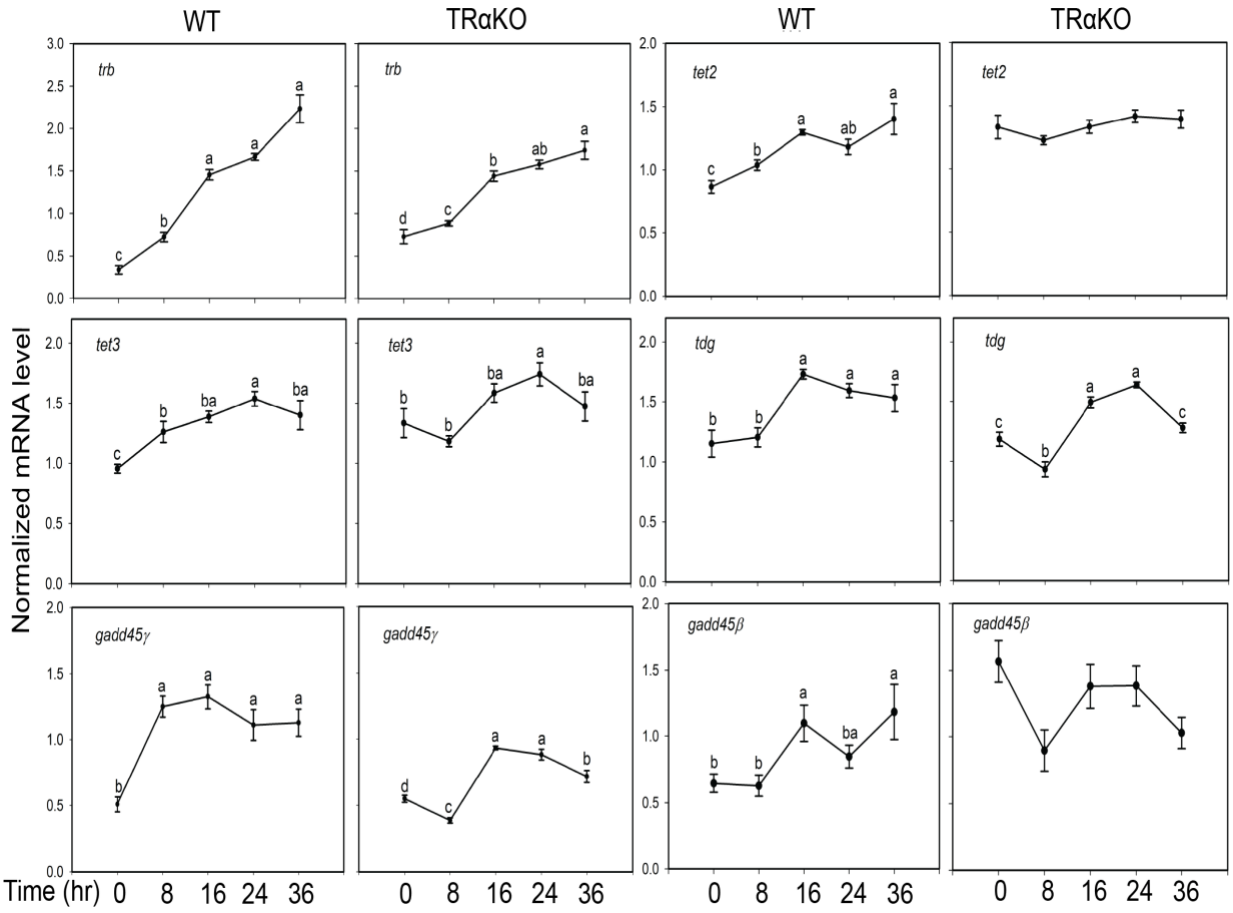


Figure 3.1. Exogenous thyroid hormone induces genes involved with DNA demethylation in pre-metamorphic tadpole brain. We analyzed T_3 dependent changes in mRNA levels in the preoptic area/diencephalon of *X. tropicalis* tadpole brain by treating pre-metamorphic WT and TRαKO *X. tropicalis* tadpoles (NF stages 50-54) with T_3 (5 nM) for 0, 8, 16, 24 and 36 hr. The mRNA levels were normalized to the reference gene ***ef1α,*** which did not change with T_3 treatment. Points represent the means ± SEM (n=5/developmental stage). Means with the same letter are not significantly different (one-way ANOVA, $p < 0.001$ for *tet2, tet3, tdg, gadd45γ)*

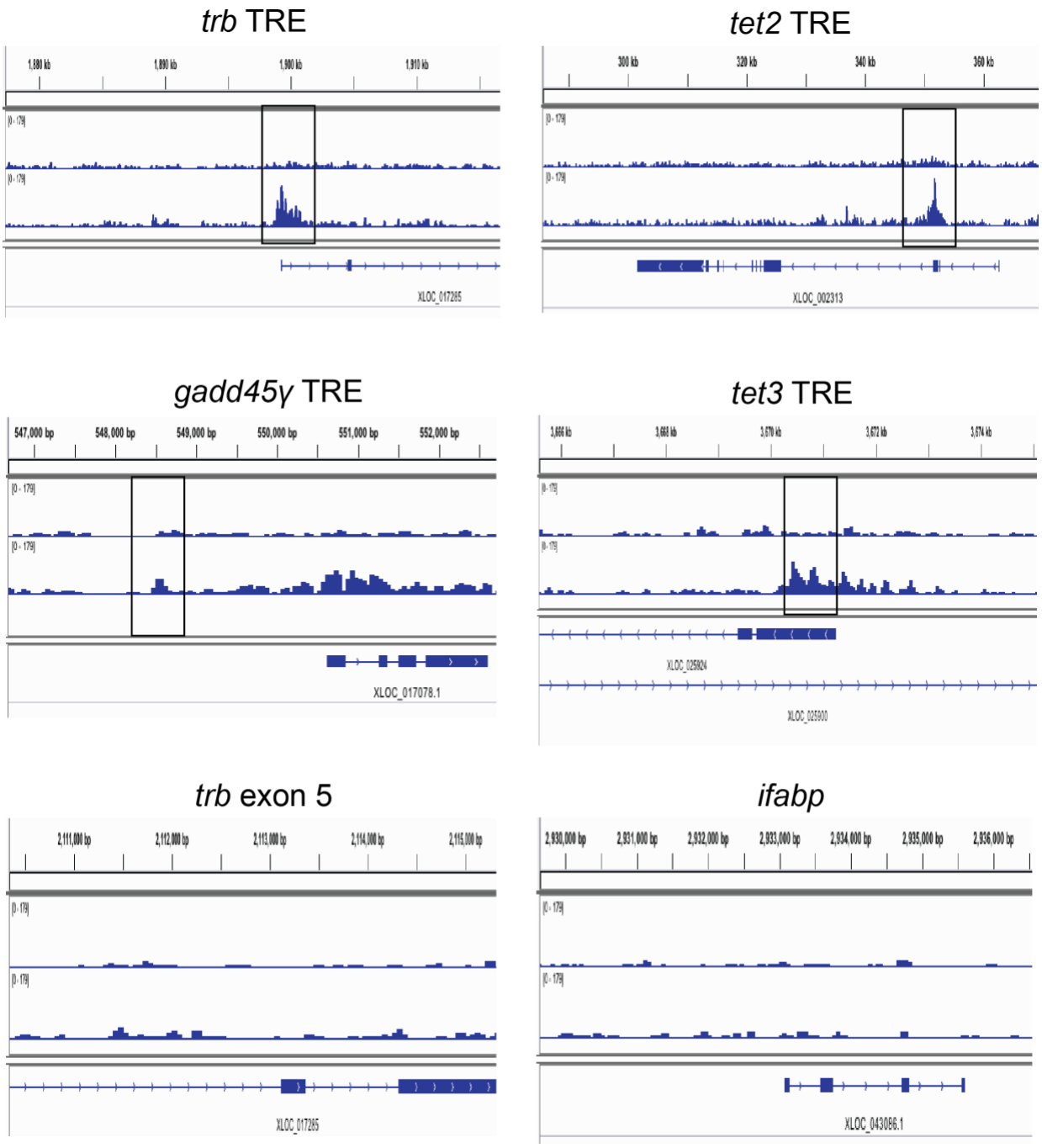
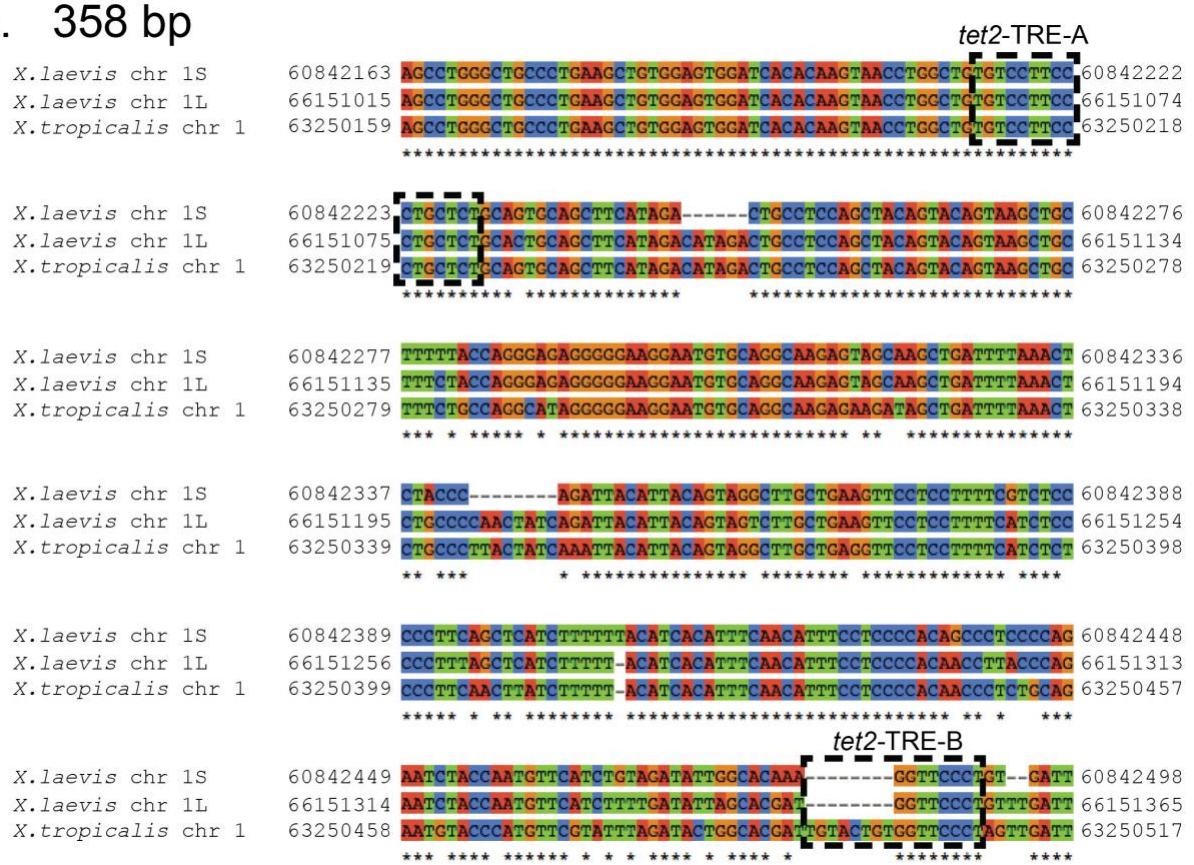


Figure 3.2. Identification of TR association in chromatin around the genes involved with DNA demethylation. Genome browser views showing location of TR peaks identified by ChIP-seq on chromatin from *X. tropicalis* brain at metamorphic climax. Top track=input, bottom track=TR immunoprecipitation. Partial gene locus is shown; bars represent exons while lines represent intron. Arrows on the gene indicate the direction of transcription. Boxes around peaks represent the putative TREs for respective genes.

A. 358 bp



B. 300 bp

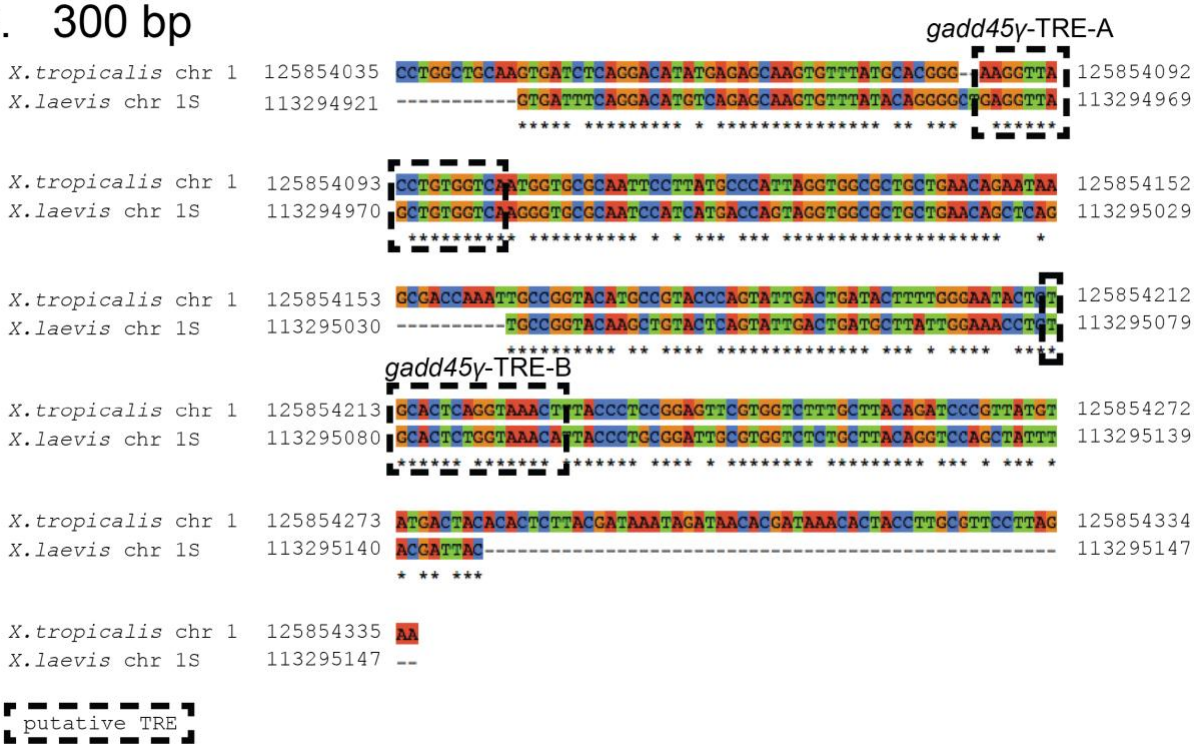


Figure 3.3. Identification of putative T_3 response elements in genes involved with DNA demethylation: We used ClustalW for aligning the genomes of the two *Xenopus* species. For *X. tropicalis*, we used genome build version *Xenopus_tropicalis_v9.1*, and for *X. laevis* we used genome build *Xenopus_laevis_v2* (there are two *X. laevis* genes owing to its pseudotetraploidy). Boxes indicate the locations of predicted DR+4 TREs. Note that only TRE-A sequence is conserved between the two frog species at the *tet2* TRE while both TRE-A and TRE-B are conserved at the *gadd45γ* TRE.

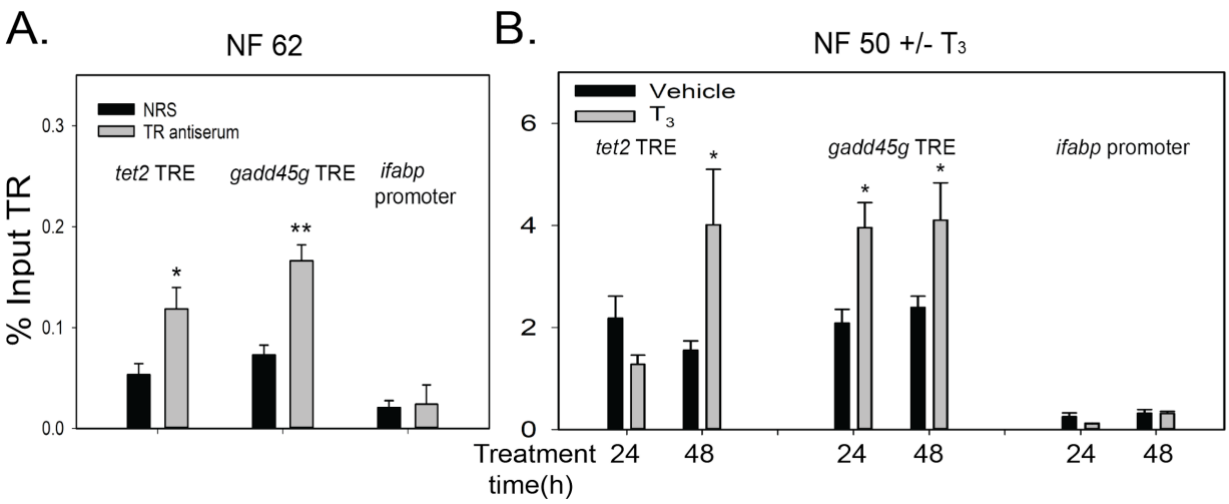


Figure 3.4. Functional analysis of two putative TREs at the *X. tropicalis tet2* and *gadd45γ* locus. (A) We conducted targeted ChIP assays for TR at the *tet2* and *gadd45γ* TREs and *ifabp* promoter (negative control) regions using chromatin isolated from the brains of tadpoles at metamorphic climax (NF stage 62). Bars represent the mean ± SEM of the ChIP signal expressed as a percentage of input for TR. (n= 4/group). Asterisks indicate statistically significant differences in TR ChIP signal and NRS (*, P < .05; **, P < .01; Student's independent sample t-test) (B) We conducted targeted ChIP assays for TR at the *tet2* and *gadd45γ* TREs and *ifabp* promoter (negative control) from brains of NF stages 50 –52 *X. tropicalis* tadpoles treated with vehicle (0.0003% DMSO) or T_3 (5 nM) for 24 and 48 hr. ChIP signal is represented as a percentage of input for TR (n=4/group). Bars represent the mean ± SEM. Asterisks indicate statistically significant enrichment of TR signal between vehicle and T_3 treatments (Student's independent sample *t*-test, $p < 0.05$).

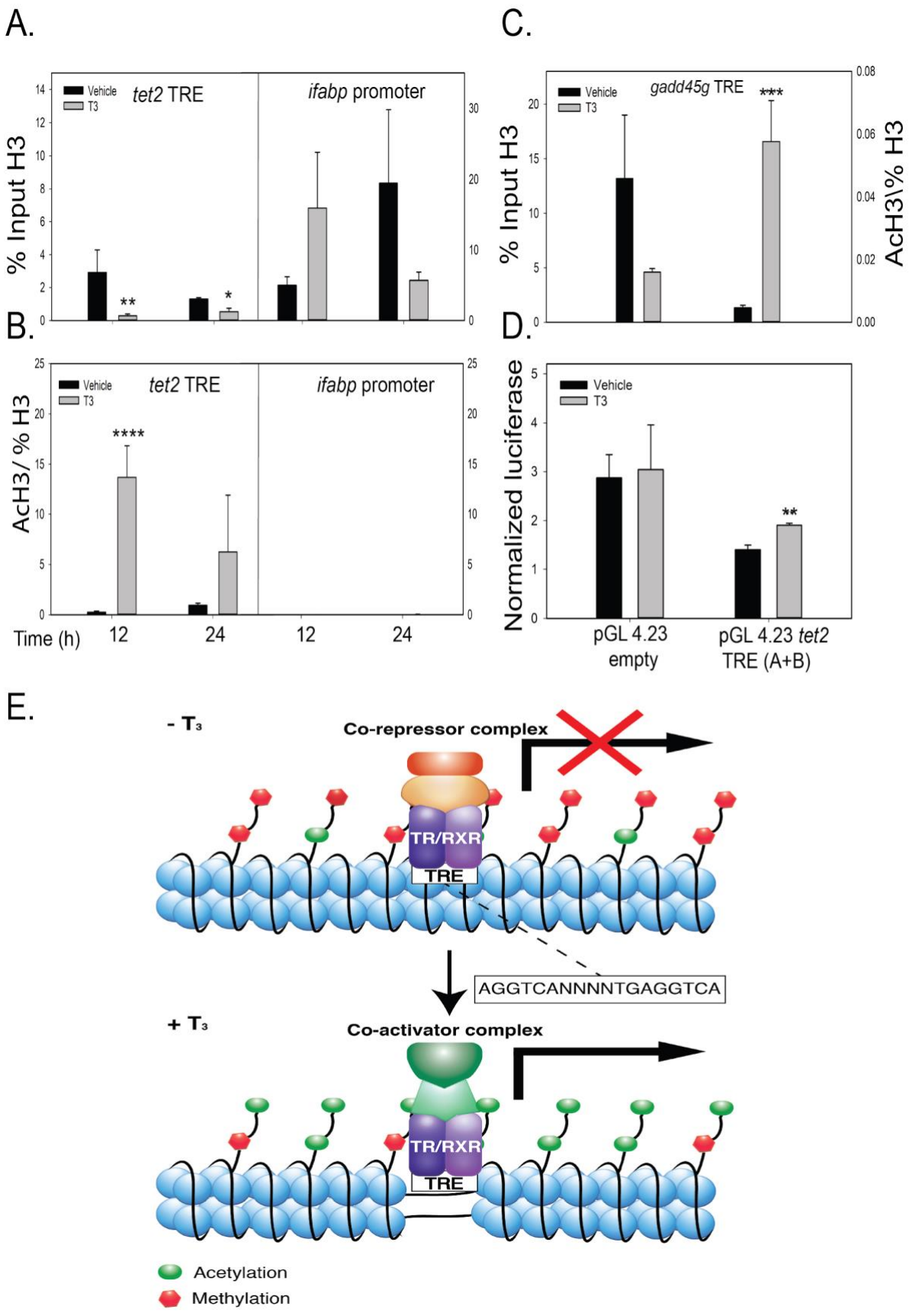

A.
C.
B.
D.
E.
Vehicle
T3
tet2 TRE
ifabp promoter
% Input H3
AcH3/ % H3
Time (h)
12
24
gadd45g TRE
AcH3\% H3
Normalized luciferase
pGL 4.23 empty
pGL 4.23 tet2 TRE (A+B)
- T₃
Co-repressor complex
TR/RXR
TRE
AGGTCANNNNTGAGGTCA
+ T₃
Co-activator complex
Acetylation
Methylation

Figure 3.5. T_3 treatment of pre-metamorphic tadpoles causes chromatin modifications at the region of the predicted *tet2* and *gadd45γ* TREs. We conducted targeted ChIP assays for H3 and AcH3 at the *tet2* and *gadd45γ* TREs from brains of NF stages 50–52 *X. tropicalis* tadpoles treated with vehicle (0.0003% DMSO) or T_3 (5 nM) for 12 and 24 hr. (A) ChIP signal for H3 is represented as % input of H3 at the *tet2* TRE and *ifabp* promoter regions. (B) Acetylation of H3 is represented as a ratio of total % input H3 at the *tet2* and *ifabp* promoter locus. (C) ChIP signal for H3 is represented as % input of H3 and Acetylation of H3 is represented as a ratio of total % input H3 at the *gadd45γ* TRE for samples treated with vehicle or T_3 for 24 hr. Bars represent the mean ± SEM ChIP signal. The asterisks indicate statistical significance in ChIP signal between treatments (* $p < 0.05$, ** $p < 0.01$, ***$p < 0.001$, ****p< 0.0001; Student's independent sample *t*-test). (D) Predicted DR+4 TREs at the *tet2* TRE support T_3-dependent transactivation. T_3-dependent transactivity of genomic fragments corresponding to *X. tropicalis tet2* TREs A and B were tested in transient transfection assays using Neuro2a[*trb1*] cells. Cells were transfected with reporter plasmids pGL 4.23 containing *tet2* TRE genomic fragments, treated with vehicle or T_3 (30 nM) for 12 hrs, harvested for RNA and tested for luciferase activity using RTqPCR. The genomic fragment containing *tet2* TRE A+B supported T_3-dependent transactivity, while the empty vector did not show any change. The luciferase mRNA was normalized to renilla mRNA; n=4/treatment. Asterisks indicate statistically significant differences from control ($p < 0.01$; Student's independent sample *t*-test). (E) A simplified model to illustrate liganded TR mediated nucleosome removal and active at TREs. In the absence of T_3, TR recruits corepressor complexes containing histone deacetylases, which results in a repressed chromatin state, characterized by repressive histone marks (red hexagons). In the presence of T_3, the corepressors are exchanged for coactivators involving histone modification enzymes leading to nucleosome removal at the TRE, increase in activation histone marks such as AcH3 and AcH4 (green circles), and gene activation.

Table 3.1. Primers

Oligonucleotides used for quantitative real time PCR analysis of gene expression (RT-PCR)

Gene	Primer sequence
ef1α	Forward: CTATCCCCGCCAAACATCT Reverse: CCATCTCAGCAGCTTCCTTC
gadd45β	Forward: GACCTCCACTGCATTCTAGTTT Reverse: CCACTGACTCCTGCTTCTATATTC
gadd45γ	Forward: GGAAGAAGTTCACGGACAAGA Reverse: GGGCAGAGACCAATAGTTCAT
tdg	Forward: GGGATCAATCCAGGTCTTATGG Reverse: TCCAGACAAGAACAGACACTTC
tet2	Forward: GGTTACTGCTTGCTTGGATTT Reverse: CACGATTGTCTTCTCTGGTTAAAG
tet3	Forward: ATCTGACATCTCCAACCAAGAG Reverse: GTCCAGAACCCAGATGTGTATAA

Table 3.2

Oligonucleotides used for quantitative real time PCR analysis of chromatin immunoprecipitation (ChIP) assays

Locus	Primer sequence
tet2 TRE	Forward: GTGGAGTGGATCACACAAGTAA Reverse: TAGCTGGAGGCAGTCTATGT
idax promoter	Forward: CGAGAGATCAGCTGCACAATA Reverse: ATGTCCAAGGTAAGGGTGTATG
tet3 TRE	Forward: GTGTGTGTAGGCTGAATCTCTAAG Reverse: AAGCCTGAGAGGGAAGAAGA
gadd45γ TRE	Forward: AGTGTTTATGCACGGGAAGG Reverse: CCGGCAATTTGGTCGCTTATT
trb exon 5	Forward: CCCCGAAAGTGAAACTCTAACTCT Reverse: CCACACCGAGTCCTCCATTTT
IFABP promoter	Forward: CCCTACATTGGTTGAGCCAGTTTT Reverse: TCAAAGGCCATGGTGATTGGT
tdg TRE	Forward: TAATCGGCCAGCTTGTTGT Reverse: TGTGGAATCTCGTAGCTGTTG
KSM	Forward: CCGTCCCTTCTTTTGTGTACATT Reverse: GCTGTTCGTGCCACTTTGC

Table 3.3

Oligonucleotides used for quantitative real time PCR analysis of Luciferase activity

Target	Primer sequence
Firefly Luciferase	Forward: CTTCGAGGAGGAGCTATTCTTG Reverse: GTCGTACTTGTCGATGAGAGTG
Renilla Luciferase	Forward: CATGGGATGAATGGCCTGATA Reverse: CAACATGGTTTCCACGAAGAAG

Table 3.4

Oligonucleotides used for construction of pGL4.23 reporter plasmids

Primer Sequence
Forward: AAACTCGAGGGAGTTCTGCCTGCCTTCTAG
Reverse: TGTGAAGCTTCAGCGTAAATTGTGTCTATTTC

Table 3.5
Antibodies used for ChIP assays

Antibody	Immunogen	Source	Catalog number
TR antiserum	Full length *Xenopus tropicalis* TRβ	Gift of Laurent Sachs	
Pre immune serum		Generated as part of in house TET3 antiserum production, before antigen injection	
H3	C terminus of human histone H3	Millipore	07-690
AcH3	C terminus of human histone H3	Millipore	06-599

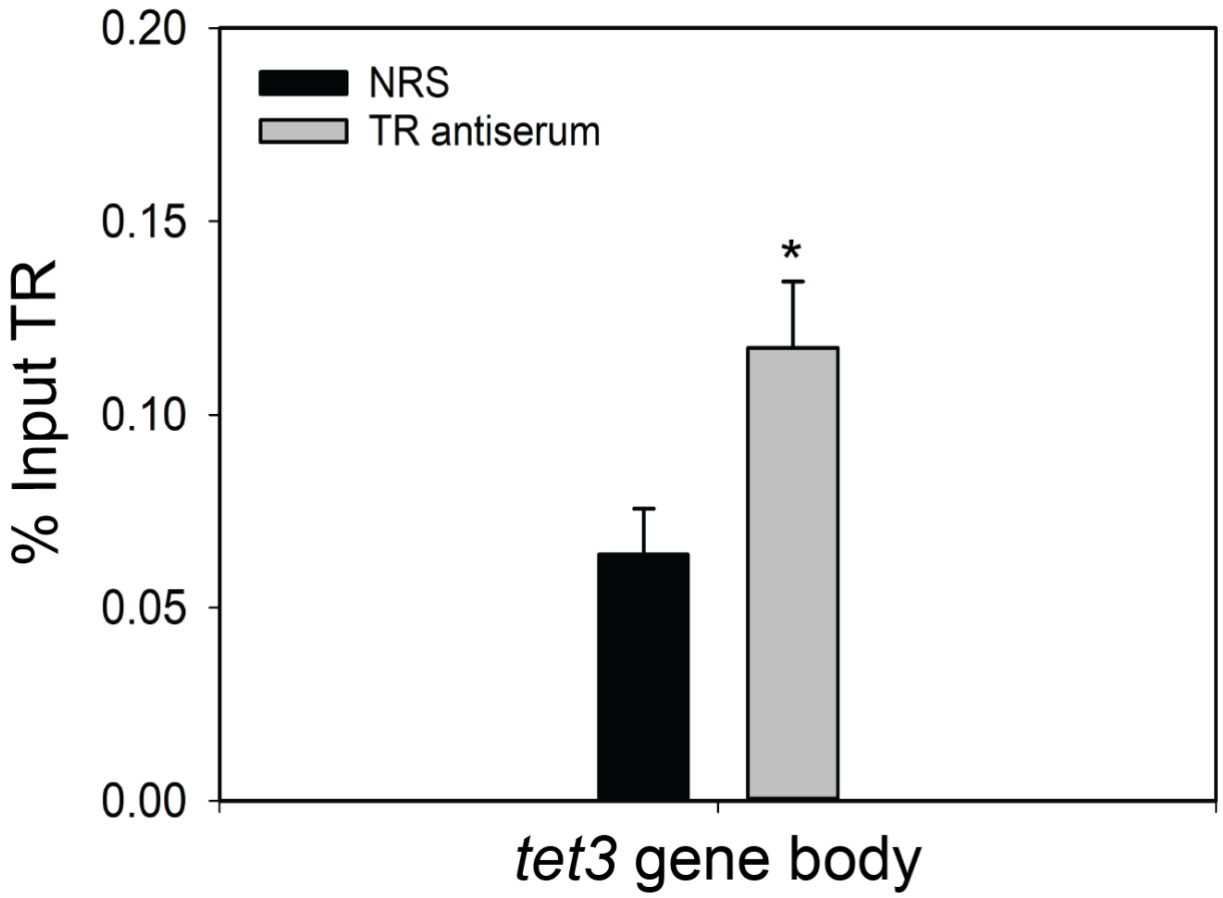
Table 3.6
Genomic regions of TR peak at the *tet2, tet3* and *gadd45γ* loci

Locus	Genomic coordinates in *Xenopus tropicalis* genome build 4.1
tet2 TRE	scaffold_111:351329-352288
gadd45γ TRE	scaffold_256:548496-548847
tet3 TRE	scaffold_40:3670321-3671181

Appendix B

Supplemental Table 3.1

Sequence of *tet2* UTR cloned into pGL 4.23 vector for luciferase reporter assay: DR+4 TREs are highlighted
GGAGTTCTGCCTGCCTTCTAGTTTGGGTAATGTAAATCGCTTCCCTACTCAGGGC TTCCCACATAAAGCCCTCACATTTTTTGCCTGTACAATAGTAAGCAGAAGCCTGG GCTGCCCTGAAGCTGTGGAGTGGATCACACAAGTAACCTGGCTGTGTCCTTCCC TGCTCTGCAGTGCAGCTTCATAGACATAGACTGCCTCCAGCTACAGTACAGTAA GCTGCTTTCTGCCAGGCATAGGGGGAAGGAATGTGCAGGCAAGAGAAGATAGC TGATTTTAAACTCTGCCCTTACTATCAAATTACATTACAGTAGGCTTGCTGAGGTT CCTCCTTTTCATCTCTCCCTTCAACTTATCTTTTTACATCACATTTCAACATTTCCT CCCCACAACCCTCTGCAGAATGTACCCATGTTCGTATTTAGATACTGGCACGATT GTACTGTGGTTCCCTAGTTGATTTTTTTCCCCCTGTGAGGTTGCCAGAGGAGGTC TTTAAAACCTTTAAAAGTCCTTCAGACTCAGCACTTGCAATATTTCAATTAAGACA GAACCTCTTGTTTACTGTGGCCATGTGAGTGAGACAGAAATAGACACAATTTACG CTG



Supplementary Figure 3.1. Thyroid hormone receptors associate in chromatin with the *tet3* gene body in *X. tropicalis* tadpole brain. We conducted targeted ChIP assays for TR at the *tet3* gene body that showed TR association in Fig 3.2 using chromatin isolated from the brains of tadpoles at metamorphic climax (NF stage 62). Bars represent the mean SEM of the ChIP signal expressed as a percentage of input for TR. (n= 4/group). Asterisks indicate statistically significant differences in TR ChIP signal and NRS (*, P < .05; **, P < .01; Student's independent sample t test).

Author contributions

I contributed to the work presented herein both experimentally and intellectually. Experimentally, I collected samples, established protocols and performed experiments for figures 3.1-3.5. Dr. Christopher Sifuentes assisted in statistical analyses of the multiple linear regression model presented in Fig 3.1. Arasakumar Subramani conducted the transient reporter assays presented in Fig 3.5 D. Dr. Elvira Arellanes Licea assisted in sample collection and conducting ChIP qPCR assays presented in Fig 3.5 A,B,C.

CHAPTER 4

LOCUS-SPECIFIC, THYROID HORMONE-MEDIATED DNA DEMETHYLATION IN DEVELOPING XENOPUS TROPICALIS BRAIN

Abstract

Methylation of cytosine residues in DNA is one type of epigenetic modification that affects gene transcription, typically leading to repression; while, DNA demethylation favors activation. We used *Xenopus* tadpole metamorphosis, a thyroid hormone (T_3)-dependent postembryonic developmental process, to investigate a possible role for T_3 in the regulation of DNA methylation in developing brain. We used three independent assays to investigate possible changes in DNA methylation at two T_3 response elements (TREs) of the known T_3-regulated gene, DNA methyltransferase 3a (*dnmt3a*). Using bisulfite sequencing, we discovered that one of the TREs within *dnmt3a* (TRE-A) underwent DNA demethylation during spontaneous metamorphosis. Using immunoprecipitation for 5 hydroxy methyl cytosine (5-hmC), an active DNA demethylation intermediate, we found that treatment of pre-metamorphic tadpoles with T_3 increased 5-hmC at the *dnmt3a* TRE-A in the genome of neural cells. T_3 treatment increased recruitment to chromatin of ten eleven translocase 3 (TET3), a methylated DNA-binding dioxygenase that catalyzes conversion of 5-mC to 5-hmC, at *dnmt3a* TRE-A evidenced by chromatin immunoprecipitation assay. We also found TET3 to be recruited, upon T_3 treatment, to chromatin at regions of TREs of the T_3 target genes *trb,*

th/bzip, klf9 and *gadd45γ*. Using immunohistochemistry, we found that T_3 increased immunoreactivity for TET3, and the active DNA demethylation intermediates 5-hmC and 5 carboxy methylcytosine (5-caC) in the brain of pre-metamorphic tadpoles. Our findings support that T_3 induces DNA demethylation at TREs of known T_3 response genes in the tadpole brain. Furthermore, this study provides evidence that DNA demethylation at the TREs is catalyzed by active recruitment of TET3. To our knowledge this is the first study to show that T_3 can induce DNA demethylation, and the underlying mechanisms in a developmental model system.

Introduction

The eukaryotic genome is punctuated by a series of epigenetic marks that add an additional layer of information to the genome and hence, alter gene regulation. Methylation of DNA is one epigenetic modification characterized by the covalent addition of a methyl group to the fifth carbon ring of the cytosine (5-mC). DNA methylation is a mechanism that is conserved in most plant and animal systems[1–4] and plays significant roles in regulating tissue-specific gene expression, X chromosome inactivation, genomic imprinting, and maintaining genome stability[5,6].

Methylation of DNA is a highly enzymatic process mediated by a family of DNA methyltransferases (DNMTs) that transfer a methyl group from *S*-adenyl methionine (SAM) to the fifth carbon of a cytosine residue on DNA (5-mC). Four DNMT enzymes have been identified in most vertebrates; DNMT1, DNMT3A, DNMT3B and DNMT3L[7]. Two DNMTs (DNMT3a and DNMT3b) function as *de novo* methyltransferases where new methylation patterns are established on unmodified DNA in a replication-independent manner. Conversely, DNMT1 functions as the major maintenance methyltransferase. Maintenance of DNA methylation is a DNA replication-dependent process in which the methylation pattern on the parent DNA strand is copied on to the daughter DNA strand[8,9]. All three DNMTs have been reported to be crucial during embryonic development. Additionally, substantial expression of DNMTs has been reported in the vertebrate brain, especially in post mitotic neurons, suggesting that DNMTs and DNA methylation play important roles in the brain[10–12].

Methylation of DNA occurs throughout the genome, including at gene promoters, within gene bodies and at intergenic regions, predominantly in the CpG dinucleotide context[13].

Approximately 70-80% of CpG dinucleotides in vertebrates are methylated. The remaining unmethylated CG dinucleotides mostly occur in stretches of ~ 500-2000 bp that have a high CG density and are termed CpG islands (CGI)[14,15]. While several studies have highlighted that DNA methylation, particularly at gene promoters, transcription start sites (TSS) or enhancers is associated with transcriptional repression of the associated genes, positive correlations between gene body methylation and transcriptional upregulation have also been reported both in plant and animal genomes [7,16–20]. This indicates that it is not just the presence of a methylation mark, but also the location of the mark, and its relation to the developmental and cellular context that determines its relationship to gene regulation.

Despite its stability and heritability, methylation marks on DNA can be reversed through a process of active or passive DNA demethylation. Passive DNA demethylation is the loss of DNA methylation during successive rounds of replication in the absence of functional DNA methylation maintenance machinery. By contrast, active DNA demethylation is a process of removal of the methyl group from 5-mC through a series of enzymatic reactions. The Ten-eleven translocation (TET) family of dioxygenases (TET1, TET2, and TET3) catalyze active DNA demethylation by oxidizing 5-mC to oxidative intermediates, including 5-hydroxy methyl cytosine (5-hmC). Recent findings suggest that 5-hmC is a key intermediate during active DNA demethylation and may also function as a stable epigenetic mark by itself [21,22] whose abundance in the mammalian genome parallels the expression of TET enzymes, especially in the brain[23],[24]. Enrichment of 5-hmC in the proximity of genes is associated with highly

expressed genes, further suggesting that 5-hmC may have distinct functions and not just serve as a DNA demethylation intermediate[25,26,27–29].

The TET enzymes subsequently oxidize 5-hmC to 5-formylcytosine (5-fC) and to 5-carboxylcytosine (5-caC), and the oxidized intermediates are then removed through the base-excision repair pathway catalyzed by thymine DNA glycosylase (TDG), or by nucleotide excision repair pathways catalyzed by growth arrest and DNA damage (GADD45) enzymes[24,30–35].

All three *tet* genes are expressed in the developing mammalian brain, and *tet3* has been shown to be essential for eye and neural development in *Xenopus* embryos[36]. However, despite mounting evidence suggesting the importance of DNA demethylation in several biological processes including early embryonic development, neurogenesis, learning and memory formation, the mechanisms by which TET enzymes are recruited to specific genomic regions to promote active DNA demethylation, or the protein interactive partners of TET enzymes are still largely unexplored.

Post-embryonic brain development is critically dependent on thyroid hormone (T_3), whose actions are mediated by T_3 receptors (TRs) that function as ligand-activated transcription factors. The TRs regulate gene transcription by modifying local chromatin structure through recruitment of histone-modifying enzymes. TRs typically function as heterodimers with retinoid X receptors (RXRs) and bind to specific T_3 response elements (TREs) in DNA. In addition to the well-known modulation of post-translational modification of histones by T_3, it was recently reported that liganded TR directly induces transcription of the *dnmt3a* gene in the developing tadpole, supporting that T_3 may influence DNA methylation in the developing brain[10] .

In the present study, we investigated developmental and T_3-dependent modulation of the neural cell methylome in the brain of *Xenopus* tadpoles during metamorphosis, a T_3-dependent postembryonic process. Using MethylCap-seq, we previously found that regions around TREs of a direct T_3 target gene, *dnmt3a,* showed reduction in methylation peak height during metamorphosis, corresponding to increases in circulating plasma T_3 concentration (Kyono, Raj, et al., 2018, *in manuscript*). Using DNA target-specific assays like bisulfite sequencing and methylation sensitive restriction digest PCR (chop qPCR) we validated the results of the MethylCap-seq experiment, and we found that the regions of the TREs underwent DNA demethylation during spontaneous metamorphosis. This led us to hypothesize that T_3 induces DNA demethylation around TREs of *dnmt3a* and other direct T_3 target genes.

We conducted multiple targeted DNA methylation analyses and found that the *dnmt3a* TRE regions become demethylated in response to T_3 in *X. tropicalis* tadpole brain containing the preoptic area/diencephalon. We also found that TET3 is recruited to the TREs within *dnmt3a* and other known T_3 target genes. Using histochemical assays, we found that T_3 caused an increase in 5-hmC and 5-caC abundance in tadpole brain. Taken together, our findings support that T_3 modulates DNA demethylation around TREs of *dnmt3a* and other direct T_3 target genes in developing brain.

Materials and methods

Animal Care and Use

We obtained wild type (WT) *Xenopus tropicalis* tadpoles by in-house breeding, reared them in dechlorinated tap water (25 °C, pH 7) and maintained them at 13L:11D

photoperiod. Tadpoles were fed *ad libitum* with pulverized frog brittle powder (NASCO, Fort Atkinson, WI) or with sera micron. Developmental stage of the tadpoles was assigned using the normal table of Nieuwkoop and Faber (NF)[37]. All procedures involving animals were conducted under an approved animal use protocol (PRO00006809) in accordance with the guidelines of the Institutional Animal Care and Use Committee at the University of Michigan.

For DNA methylation analyses and chromatin immunoprecipitation (ChIP) assays, we housed WT pre-metamorphic (NF stage 50-54) tadpoles in aquaria with two liters of water 24 hr prior to hormone treatment. We added T_3 (3,5,3′-L-triiodothyronine; T_3 sodium salt; Sigma-Aldrich, St. Louis, MO) to the rearing water (first dissolved in NaoH at 500 µM) to a final concentration of 5 nM (methylation assays) or 50 nM (ChIP assay) T_3 for different times. For treatments that extended beyond 24 hr we changed the rearing water and replenished the T_3 at 24 hr after the treatment was initiated. We sacrificed by rapid decapitation, and micro-dissected the diencephalon region (for methylation analyses) or whole brain (for ChIP assays). Brains were snap frozen in liquid nitrogen and stored at –80°C until genomic DNA or chromatin extraction.

Bisulfite sequencing

We extracted DNA from the whole brains of *X. tropicalis* tadpoles using DNeasy Blood and Tissue Kit (Qiagen) and treated 400 ng of DNA with sodium bisulfite using the DNA modification kit (Epigentek, Farmingdale, NY) (three replicates per developmental stage). We used the Methprimer software[38] to design primers to specifically amplify DNA that had been successfully converted by bisulfite treatment

(see Table 4.1 for oligonucleotide primers), and amplified genomic regions of interest using GoTaq DNA polymerase (Promega) in the following PCR conditions: (94ºC for 2 min; 49 cycles of 94ºC for 30 sec, 55 or 60ºC 30 sec, 72ºC 45 sec). We purified the PCR products using the Qiagen PCR purification kit and sub-cloned the products into the pGEM-T Easy vector (Promega) using the manufacturer's protocol. We conducted colony PCR using selected bacterial colonies as templates using SP6 and T7 primers. The resulting PCR products were purified using Qiagen PCR purification kit and Sanger sequenced using SP6 or T7 primers. We sequenced at least five independent bacterial clones for each of the 3 biological replicates.

5-hydroxymethylcytosine (5-hmC)-sensitive restriction digest followed by qPCR (5-hmC chop qPCR)

We extracted genomic DNA from *X. tropicalis* tadpole brain (diencephalon region) using the DNeasy Blood and Tissue Kit (Qiagen) and quantified 5-hmC using the EpiMark® 5-hmC and 5-mC Analysis Kit (New England BioLabs, Ipswich, MA) following the manufacturer's protocol. The kit utilizes the T4β-glucosyltransferase (T4-BGT) enzyme for addition of glucose to the hydroxyl group of 5-hmC, converting 5-hmC to 5-ghmC. We used MspI to digest genomic DNA, which cleaves 5-mC and 5-hmC in the CCGG context, but not 5-gmC. We used 1.5 µg of genomic DNA and followed the manufacturer's protocol for glucosylation and restriction digestion. The extent of restriction digest was measured using qPCR assay (see Table 4.1 for oligonucleotide primer sequences).

5-hydroxymethylcytosine DNA immunoprecipitation (hmeDIP)

We extracted DNA using DNeasy Blood and Tissue kit (Qiagen) and sheared it to 250 bp using a Covaris M220 ultrasonicator at peak power 74 W, duty factor 10.2, 208 cycles for 80 sec. We used 500 ng of sheared DNA to conduct 5-hmC immunoprecipitation using the EpiQuik Hydroxymethylated DNA Immunoprecipitation (hmeDIP) Kit (Epigentek). We measured the quantity of immunoprecipitated DNA using real-time qPCR and normalized it to 3% input.

We repeated the experiment following the protocol by Nestor and Meehan[39]. We extracted DNA using DNeasy Blood and Tissue kit (Qiagen) and sheared it to 250 bp using the same conditions described above. We used 2.5 mg of sonicated DNA followed by immunoprecipitation using 5-hmC antibody (ActiveMotif, 39770) as described[39]. We used 2.5 ml (0.25 ng) of 5-hmC containing DNA (NEB, N0482) as spike-in control for all samples (see Table 4.1 for oligonucleotide primer sequences).

Chromatin immunoprecipitation (ChIP) assay

We extracted chromatin from whole brains of tadpoles treated with or without T_3 (50 nM) for 24 or 48 hr (9 brains pooled per replicate; n = 4) as described by Denver and Williamson[40]. Chromatin samples were sheared to ~400 bp using the Covaris M220 ultrasonicator for 950 sec at duty factor 8, peak power 75 W and 200 cycles. All chromatin samples were run on a 1% agarose gel to verify size, snap frozen in liquid nitrogen and stored at – 80°C until analysis. We conducted ChIP assays as previously described[40,41] using our custom xlTET3 antiserum (described in Chapter 2). For negative controls, we replaced the primary antibody with pre-immune serum from the

same rabbit before xlTET3 antigen injection (We used antiserum 23560 for ChIP experiments as this antiserum showed better TET3 ChIP signal in our ChIP experiment with early embryos. Fig 2.2 F). We analyzed ChIP DNA by real-time qPCR using SYBR Green assays (oligonucleotide primer sequences in Table 4.1)

Immunohistochemistry (IHC)

We obtained brains for immunohistochemistry by dissecting the dorsal heads of *X. tropicalis* tadpole treated with or without T_3 for 24 and 48 hr. We fixed tadpole heads in 4% paraformaldehyde made in 0.6X phosphate buffered saline (PBS) overnight at 4°C. We dissected the brains from the skull and further fixed them in 4% PFA for 2-3 hr at 4°C. We transferred brains to 30% sucrose in 0.6X PBS at 4°C overnight followed by saturation in a sucrose:Tissue-Tek Cryo-OCT compound (Fisher Scientific) (2:1) overnight at 4°C. We embedded the brains in a mold containing the sucrose:Cryo-OCT compound, snap froze them and stored them at -80°C until use. We collected 16 µM transverse cryosections onto Superfrost slides (Fisherbrand, 12-550-15) and stored the slides at -80°C until processing for IHC.

For IHC, we air-dried the slides for 30 minutes, rehydrated them in 0.6X PBS and subjected them to antigen retrieval by immersing slides in 0.01 M sodium citrate, pH 6 at 95°C for ten min. We then let the slides cool to room-temperature (RT) and blocked with Superblock (Pierce Chemical Co.) plus 5% normal goat serum and 0.3% Tween-20 in 0.6X PBS for 1-2 hr at RT. After blocking, we incubated the slides overnight at 4°C with either rabbit polyclonal 5-hmC (Diagenode C15410205-20), 5-caC antibody (Diagenode C15410204-20) at a dilution of 1:500 or xlTET3 IgG (23561; 0.7 µg/ml).

We used the DyLight 550-conjugated goat anti-rabbit IgG secondary antibody (#84541, Thermo Scientific, Grand Island, NY, USA) and mounted the slides with coverslips with ProLong™ Diamond Antifade Mountant (Thermo Fisher Scientific, catalog # P36965). We imaged immunostained sections by inverted fluorescent microscopy using an Olympus IX81 inverted microscope (Olympus, Tokyo, Japan) and carefully matched sections for anatomical level following the *Xenopus* brain atlas developed by Tuinhof and colleagues[42]. We captured digital micrographic images by uniformly adjusting exposure, and for the captured images we adjusted brightness, contrast, and evenness of illumination uniformly using Adobe Photoshop CS6 (Adobe Systems, Inc., San Jose, CA) for further image analysis and representation.

Data analysis and statistics

We used SigmaPlot statistical software (version 13; Systat Software, San Jose, CA) for data analyses. We analyzed data using Student's independent sample *t*-test ($p=0.05$). Data were Log_{10}-transformed before statistical analysis for the derived values or when the variances were found to be heterogeneous.

Results

Genomic regions of *dnmt3a* with adjacent TREs undergo DNA demethylation during spontaneous metamorphosis.

Data from a MethylCap-seq experiment (Kyono, Raj, et al., 2018, *in manuscript*) showed a progressive decline in DNA methylation during metamorphosis at two regions of the *dnmt3a* locus, one in the upstream flanking region, the other within the predicted

first intron (Fig. 4.1A). These two genomic regions contain one identified TRE each, named TRE-A (upstream) and TRE-B (first intron)[10]. The largest decrease in DNA methylation occurred within the flanking regions of a CpG island (referred to as CpG island shores: west shore and east shore) located immediately downstream of TRE-A (Fig. 4.1B). Within the first intron, where TRE-B is located just downstream of a CpG island, there was a smaller decrease in the MethylCap-seq peaks during metamorphosis (Fig. 4.1B). Subsequently, we focused on the upstream region of *dnmt3a* containing TRE-A for further analysis.

We conducted bisulfite sequencing to validate the MethylCap-seq results, and to identify specific CpG dinucleotides within the west and east shores around the *dnmt3a* TRE-A region that change methylation between pre-metamorphosis (NF stage 50) and metamorphic climax (NF stage 62; Fig. 4.1B). Of the five CpG dinucleotides found within the west shore, the first three (CpG-1, CpG-2, and CpG-3) underwent demethylation between pre-metamorphosis and metamorphic climax (Fig. 4.1C). In pre-metamorphic tadpole brain, 93.3% of CpG1, 100% of CpG2, and 93.3% of CpG3 were methylated; whereas, at metamorphic climax this decreased 33.3% for CpG1, 66.7% for CpG2 and 77.8% for CpG3 (Fig. 4.1 C,D). The other two CpGs in this region (CpG4 and CpG5) were unchanged (Fig.4.1 C). We also conducted bisulfite sequencing within the east CpG island shore around the *dnmt3a* region containing TRE-A and found no difference in CpG methylation between the two stages (data not shown).

Treatment with T_3 induces locus-specific DNA demethylation and TET3 recruitment to chromatin at the upstream flanking/TRE-A region of *dnmt3a* in pre-metamorphic tadpole brain.

Given that T_3 controls tadpole metamorphosis, we next investigated if T_3 treatment (5 nM) of pre-metamorphic tadpoles for 24 or 48 hr can induce DNA demethylation at the region of *dnmt3a,* described above, that undergoes demethylation during spontaneous metamorphosis (Fig 4.1). We analyzed changes at the west shore region located 100 bp from the *dnmt3a*-TRE-A (Fig 4.2 D). We used two methods to approach this question: 5hmC-methyl-sensitive restriction digestion (5-hmC Chop qPCR) and 5-hydroxymethyl DNA immunoprecipitation (hmeDIP) assay. Treatment with T_3 caused ~ 2 fold increase in 5-hmC at both time points analyzed by 5-hmC Chop qPCR (Fig. 4.2A). This increase was confirmed by hmeDIP at the 48, but not the 24 hr time point (Fig. 4.2 B).

We next investigated if the increase in 5-hmC that we saw was correlated with T_3-dependent increases in TET3 recruitment to this region. Similar to results with hmeDIP, we saw increased TET3 ChIP signal in the brain of tadpoles treated with T_3 for 48 hr (Fig. 4.2 C). We also looked at TET3 recruitment to chromatin at two control regions: the *sox9* promoter, which lacks methylation, and *dnmt3a* exon 2, which is methylated but showed no changes in peak heights across development (both determined by MethylCap-seq; Kyono, Raj, et al., 2018, *in manuscript*). There was no effect of T_3 on TET3 ChIP signal at these negative control regions at any time point (Fig. 4.2 C for *sox9* promoter; *dnmt3a* exon 2 data not shown).

Treatment with T_3 promotes TET3 recruitment to chromatin at known TREs of other genes in premetamorphic tadpole brain.

Following discovery of enrichment of 5-hmC and TET3 at the upstream flanking/TRE-A region of *dnmt3a*, we investigated whether other known TREs exhibited similar changes. We chose the TRE regions of known T_3 target genes: thyroid hormone receptor beta (*trb*;[43]), thyroid hormone induced basic leucine zipper protein (*th/bzip*;[44]), Krüppel like factor 9 (*klf9*;[41]) and growth arrest and DNA damage 45 gamma (*gadd45γ*; Fig 3.2, 3.3). We conducted separate ChIP assays targeting TR or TET3 using brain chromatin isolated from tadpoles at metamorphic climax (NF stage 62). We saw significantly higher TR ChIP signal compared to normal rabbit serum (NRS) ($p<.05$ - $p<.0001$) at the TRE regions of *trb*, *th/bzip, klf9* and *gadd45γ* (Fig 4.3 A) and no difference in ChIP signal at the negative control regions *trb* exon 5 (Fig. 4.3 A,B) and the *ifabp* promoter (Appendix C, Supplementary Fig. 4.1A), thus confirming previous findings of the presence of TREs at these genes. Similarly, we saw significantly higher TET3 ChIP signal compared with pre-immune serum at these genes. ChIP signal for TET3 showed a higher mean value than pre-immune serum at the *gadd45γ* TRE but was not statistically significant ($p=0.05$). We did not see a difference in ChIP signal at the two negative control regions (Fig. 4.3 A,B; Appendix C, Supplemental Fig 4.1A). We then conducted targeted TR and TET3 ChIP assays at TRE regions of *klf*9 and *gadd45γ* on brain chromatin isolated from pre-metamorphic *X. tropicalis* tadpoles treated with or without T_3 for 24 or 48 hr. Treatment with T_3 caused recruitment of TR and TET3 at the *klf9* TRE at both time points, which was significantly higher ($p<0.05$) at 48 hr compared with 24 hr (Fig 4.4 A,C). We also saw increased TR and TET3

recruitment to the *gadd45γ* TRE; this was statistically significant for TR ($p<0.05$) at both 24 and 48 hr, and for TET3 ($p<0.05$) at 48 hr (Fig 4.4 B,D). The mean 5-hmC quantity (analyzed by hmeDIP) was higher at the TREs of both genes at 48 hr, but this did not reach statistical significance (Appendix C, Supplementary Fig. 4.1B). We did not see enrichment of TET3 ChIP signal with T_3 treatment at *trb* and *th/bzip,* which can be attributed to technical difficulties (data not shown).

Treatment with T_3 increased TET3 immunoreactivity in pre-metamorphic tadpole brain.

Using our anti-xlTET3 IgG (described in Chapter 2), we analyzed changes in xlTET3-ir in transverse sections of pre-metamorphic tadpole brain treated with T_3 for 24 or 48 hr. There was low xlTET3-ir in pre-metamorphic tadpole brain treated with vehicle, and this was strongly increased by treatment with T_3 at 24 and 48 hr, with highest signal at 48 hr T_3 (Fig 4.1). We saw no xlTET3-ir in the most rostral regions of the telencephalon (Appendix A, Supplementary Fig 2.1, regions A,B,C,D; data not shown). xlTET3-ir was first detected in the medial pallium and pre-optic area (Appendix A, Supplementary Fig 2.1, region F). Moving caudally, we saw xlTET3-ir throughout the pre-optic area (Appendix A, Supplementary Fig 2.1 region G) and the following brain regions (Appendix A, Supplementary Fig 2.1 regions I,J,K,M), with highest signal in the thalamic nuclei (anterior, ventromedial, posterior, lateral), the ventral hypothalamic nucleus and the tegmentum (Fig.4.5). The xlTET3-ir was low or absent in the hindbrain and spinal cord (data not shown)

Treatment with T_3 increased immunoreactivity for DNA demethylation intermediates 5-hmC and 5-caC in the brain of pre-metamorphic tadpole brain.

Similar to xlTET3-ir, 5-hmC and 5-caC immunoreactivity in pre-metamorphic tadpole brain was low or non-detectable in vehicle treated animals. We strong increases in 5-hmC-ir and 5-caC-ir in tadpole brain after treatment with T_3 for 24 or 48 hr, with highest signal at 48 hr (Fig 4.2, 4.3). We saw no 5-hmC-ir or 5-caC-ir in the most rostral regions of the telencephalon (Appendix A, Supplementary Fig 2.1, regions A,B,C,D; data not shown). 5-hmC-ir and 5-caC-ir was first detected in the medial pallium and the pre-optic area (Appendix A, Supplementary Fig 2.1, region F). Moving caudally, we saw 5-hmC and 5-caC-ir throughout the pre-optic area (Appendix A, Supplementary Fig 2.1, region G) and the following brain regions (Appendix A, Supplementary Fig 2.1, regions I,J,K, M), with highest signal in the thalamic nuclei (anterior, ventromedial, posterior, lateral), the ventral hypothalamic nucleus and the tegmentum (Fig. 4.2, 4.3). The 5-hmC and 5-caC-ir was low or absent in the hindbrain and spinal cord (data not shown)

Discussion

Here we show for the first time that T_3 induces DNA demethylation around the sites of TR binding through recruitment of TET3 to the locus. The important roles of DNA methylation and demethylation during early embryonic development has been well studied in many mammalian systems, while modulation of DNA methylation during post-embryonic development is poorly understood. Similarly, the role of liganded TRs in inducing histone modifications have been well studied, very little evidence exists suggesting a role for TRs and other nuclear hormone receptors in regulating DNA

methylation. We provide evidence showing that T_3 induces DNA demethylation around TREs of *dnmt3a* and other direct T_3 target genes and that this may be, in part, due to T_3-dependent TET3 recruitment to the locus. Additionally, we also provide evidence that treatment with T_3 increases TET3, 5-hmC and 5-caC immunoreactivity in premetamorphic *X. tropicalis* tadpole brain.

Thyroid hormone response elements are critical regulatory regions for activation of T_3-regulated genes. We have previously identified and characterized such regions associated with *the dnmt3a* gene[10,45]. Using genome wide analysis of DNA methylation (MethylCap-seq), we previously found that the upstream region of *dnmt3a* where TRE-A is found became demethylated with progress of metamorphosis (Kyono, Raj, et al., 2018, *in manuscript*). In this study, we applied several targeted analyses at upstream flanking/TRE-A region of *dnmt3a* to investigate a potential role for T_3 in DNA demethylation in *Xenopus* tadpole brain during metamorphosis.

We provide evidence that DNA demethylation can be induced at this genomic region by exogenous treatment with T_3. Using two different targeted approaches to study 5-hmC enrichment (5-hmC chop qPCR and hmeDIP), we show that 5-hmC is substantially enriched adjacent to the *dnmt3*a-TRE-A locus. Even though 5-hmC chop qPCR and hmeDIP analyze enrichment of 5-hmC at the same locus around *dnmt3a* TRE-A, 5-hmC chop qPCR assay identified an enrichment of 5-hmC at 24 and 48 hr while hmeDIP assay identified 5-hmC enrichment only with 48 hr of T_3 treatment. This discrepancy is likely due to the nature of the two assays. The hmeDIP assay identifies enrichment of 5-hmC across all CGs in a given 300 bp DNA fragment, while 5-hmC chop qPCR assay targets a specific CG within the restriction site of MspI. We repeated

5-hmC immunoprecipitation (hmeDIP) experiment twice using two different methods with similar results across multiple genomic regions (in materials and methods). Our results are consistent with other studies that have reported that 5-hmC is enriched within promoters and other regulatory regions with transcription factor (TF) binding and this enrichment is associated with activation of gene transcription[46,47].

Importantly, we show here that T_3-dependent enrichment of 5-hmC around the *dnmt3a* TRE-A is correlated with recruitment of TET3. While the importance of the TET family of enzymes in active DNA demethylation is well studied[22,48], virtually nothing is known about how TET3 proteins are recruited to specific genomic regions. Here, we provide evidence that TET3 is recruited around the sites of TR binding and this recruitment is enhanced by T_3. Furthermore, we show here that TET3 is recruited, along with TR, at TREs of several known TR target genes, *trb, klf9* and *th/bzip* at metamorphic climax, when circulating plasma T_3 level is maximum. To our knowledge this is the first study uncovering the relationship between a nuclear hormone receptor and TET family of enzymes *in vivo.*

Recruitment of TET3 around multiple TREs with T_3 treatment could be due to multiple mechanisms a) T_3 upregulates transcription of *tet3* resulting in increased TET3 protein (we provide evidence for this in chapter 3). b) Liganded TR induces open chromatin facilitating TET3 recruitment to chromatin around TREs. We have previously reported that TR acts as a gatekeeper; upon ligand binding, it causes a local euchromatin state around the TREs thus facilitating recruitment of other transcription factors to the locus[41]. c) Activated TR complex interacts with TET3 and mediates its recruitment around TREs. It was recently reported that TRs and TET proteins interact *in*

vitro[49]. Whether liganded TR physically interacts with TET3 or recruits TET3 to the co-activator complex *in vivo* is still not known. T_3-mediated recruitment of TET3 to known TREs could be due one or a combination of the above-mentioned mechanisms and will have to be experimentally determined.

In the current study, we identified T_3-mediated TET3 recruitment at the *klf9* and *gadd45γ* TREs although we did not find an increase in 5-hmC signal upon T_3 treatment at these genomic regions (Appendix C: Supplementary Fig 4.1 B). Both *klf9* and *gadd45γ* show a huge increase in mRNA levels rapidly after T_3 treatment, as early as 4 hr[41], suggesting that the times chosen for T_3 treatment in the hmeDIP experiment in this study (24 and 48 hr) might be too late to detect 5-hmC enrichment at the TREs of these genes. It is also possible that upon T_3 treatment, these genomic regions show complete demethylation or are enriched for other active DNA demethylation intermediates (5-fC/5-caC), all of which are mediated by TET3 recruitment to the loci. These possible mechanisms will have to be further explored experimentally.

We have previously shown (Fig 2.1-2.6) that during spontaneous metamorphosis, TET3, 5-hmC and 5-caC immunoreactivities are highest when circulating plasma T_3 levels are highest, at metamorphic climax. Here we show that T_3 enhances TET3 immunoreactivity in pre-metamorphic *X. tropicalis* tadpole. We show that exogenous treatment with T_3 increases ir signal intensity with maximum signal observed around the preoptic area, thalamic nuclei, ventral hypothalamus and tegmentum in animals treated with T_3 for 48 hr. Consistent with xlTET3 immunoreactivity, we found that the DNA demethylation intermediates 5-hmC and 5-caC also show a progressive increase in immunoreactivity in parallel with increasing

time of T_3 exposure in the preoptic area, thalamic nuclei and ventral hypothalamus, regions known to be highly responsive to T_3 [50–52]. These results are consistent with our previous findings that TET3, 5-hmC and 5-caC immunoreactivity during spontaneous metamorphosis is highest at metamorphic climax, when circulating plasma T_3 level is maximum (Chapter 2)

In conclusion, the work presented here elucidates T_3-dependent induction of the active DNA demethylation around TREs in the tadpole brain, novel mechanisms for direct T_3-dependent DNA demethylation via TET3 recruitment to several known TREs in a developmental model system.

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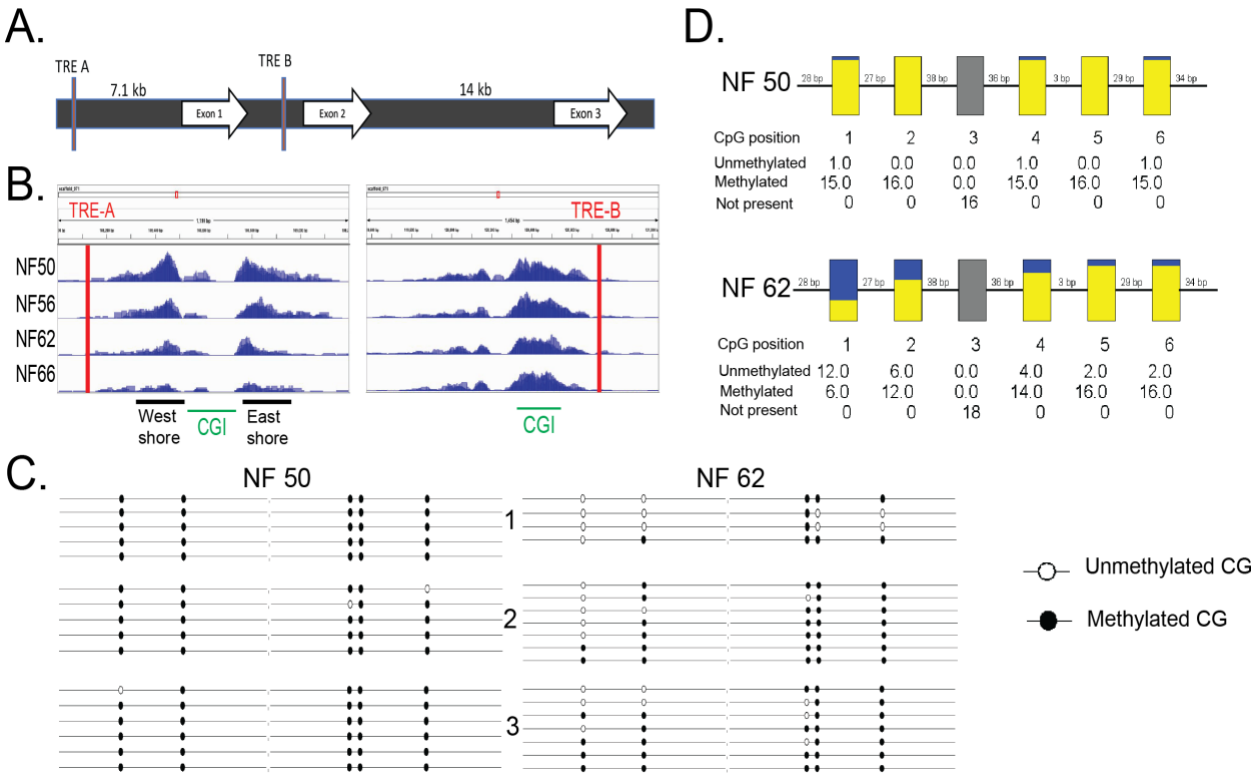


Figure 4.1. Genomic regions of *dnmt3a* with adjacent TREs undergo DNA demethylation during spontaneous metamorphosis: (A) Schematic diagram showing the location of identified functional TREs of the *dnmt3*a gene[10]. Numbers above the bars indicate the distance from the TSS (B) IGV genome browser tracks for methylated DNA capture sequencing (MethylCap-seq) data around regions surrounding the two TREs associated with *dnmt3a* gene during spontaneous metamorphosis. Red lines indicate locations of TREs. (C) Bisulfite sequencing analysis of individual CGs at the west shore around the *dnmt3a* TRE-A region. We extracted DNA from *X. tropicalis* whole brain tissue at NF stages 50 and 62 (pre-metamorphosis and metamorphic climax) and conducted bisulfite sequencing analysis around the *dnmt3a* TRE-A region. We sequenced at least five individual clones for each biological replicate, and methylation status of individual clones are shown for the two developmental stages NF 50 and NF 62. Numbers next to individual clones represent sequenced samples from the same genomic DNA (n=3/developmental stage). (D) Summary of the methylation status of five individual CpG dinucleotides found in the west shore region around TRE-A region.

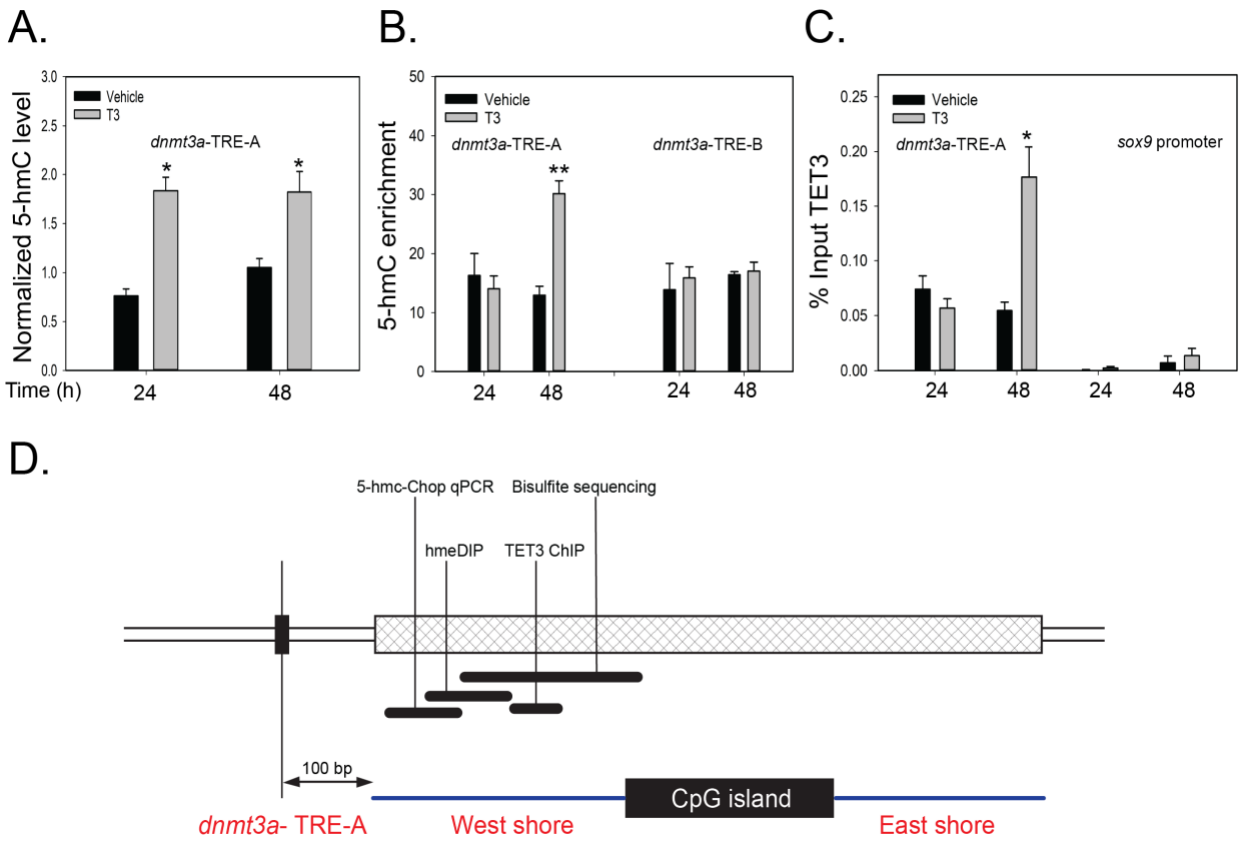


Figure 4.2. Treatment with T_3 induces locus-specific DNA demethylation and TET3 recruitment to chromatin at the west shore flanking TRE-A region of *dnmt3a* in pre-metamorphic tadpole brain: Enrichment of 5-hmC at the *dnmt3a* TRE-A identified by (A) 5hmC chop qPCR assay targeting specific CG around the *dnmt3a* TRE-A region (B) hmeDIP assay. Both assays were conducted on genomic DNA from T_3/Vehicle (5nM for 24 or 48 hr) treated tadpole brain targeting genomic regions around the *dnmt3a*-TRE-A. Enrichment of 5-hmC was observed around the *dnmt3a* TRE-A genomic region with T_3 treatment (A,B) while no difference in enrichment was observed between treatments at *dnmt3a*-TRE-B (B). Bars represent the means ± SEM (n=4/treatment, student's t-test, *, P< 0.05, **, P< 0.01) (C) TET3 protein associates around the *dnmt3a* TRE-A region. We treated premetamorphic (NF stage 50/51) *X. tropicalis* tadpoles with vehicle or T_3 (50 nM) for 24 and 48 hr, and isolated chromatin from brain tissue. We conducted ChIP assays targeting the TET3 protein adjacent to *dnmt3a* TRE-A region and *sox 9* promoter (negative control region). Bars represent the mean +/- SEM of the ChIP signal expressed as a percentage of input for anti-TET3 serum (n=4/treatment/timepoint). Asterisks indicate statistically significant differences between the TET3 ChIP signal between treatments (Student's independent sample t-test, * p<0.05). (D) Schematic representation of the genomic regions analyzed by multiple targeted assays in Figs 4.1 and 4.2, and their location with respect to the TRE-A region of *dnmt3a*. Assay names in black represent the amplicons and locations of the specific targeted assay on the west shore (See supplemental table 4.1 for sequences).

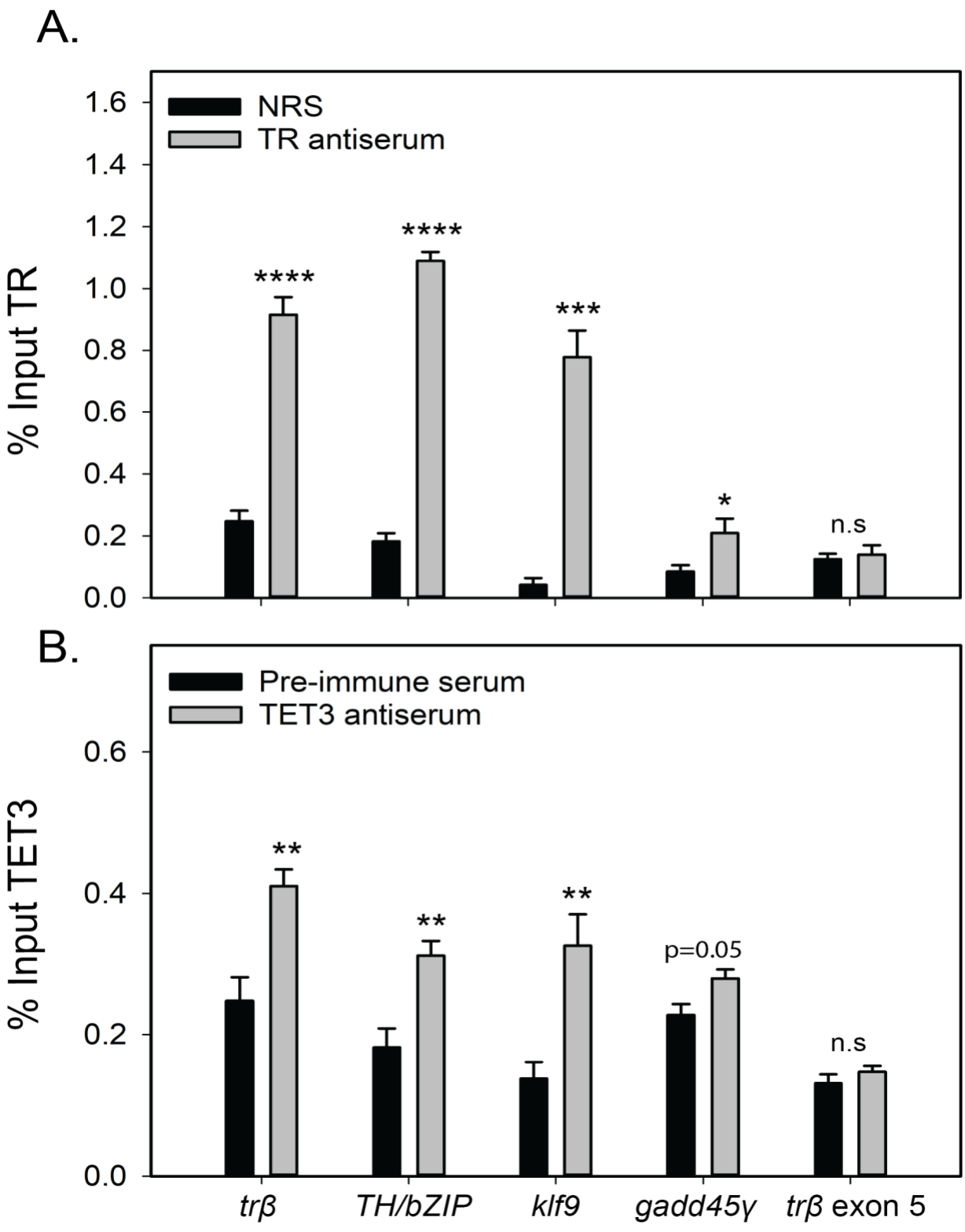

A.
NRS
TR antiserum
% Input TR
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
****
****
***
*
n.s
B.
Pre-immune serum
TET3 antiserum
% Input TET3
0.6
0.4
0.2
0.0
**
**
**
p=0.05
n.s
trβ
TH/bZIP
klf9
gadd45γ
trβ exon 5

Figure 4.3. The TRs and TET3 associate within the chromatin of TREs of known T_3 regulated genes in the tadpole brain at metamorphic climax. Targeted ChIP analysis for TR (A) and TET3 (B) was conducted on whole brain chromatin isolated from *X. tropicalis* tadpoles at NF stage 62. Immunoprecipitated samples were amplified by qPCR using primers specific to the *trb, th/bzip, klf9, gadd45γ* TREs and negative control region *trb* exon 5. ChIP signal is represented as a percentage of input for TR or TET3 serum or pre-immune serum (background control) (n=5/group). Bars represent the mean ± SEM. Asterisks indicate statistically significant enrichment of TR or TET3 ChIP signal compared to pre-immune serum (*, P< 0.05; ** P<0.01; ***, P < 0.001, ****, P < 0.0001; Student's independent t-test)

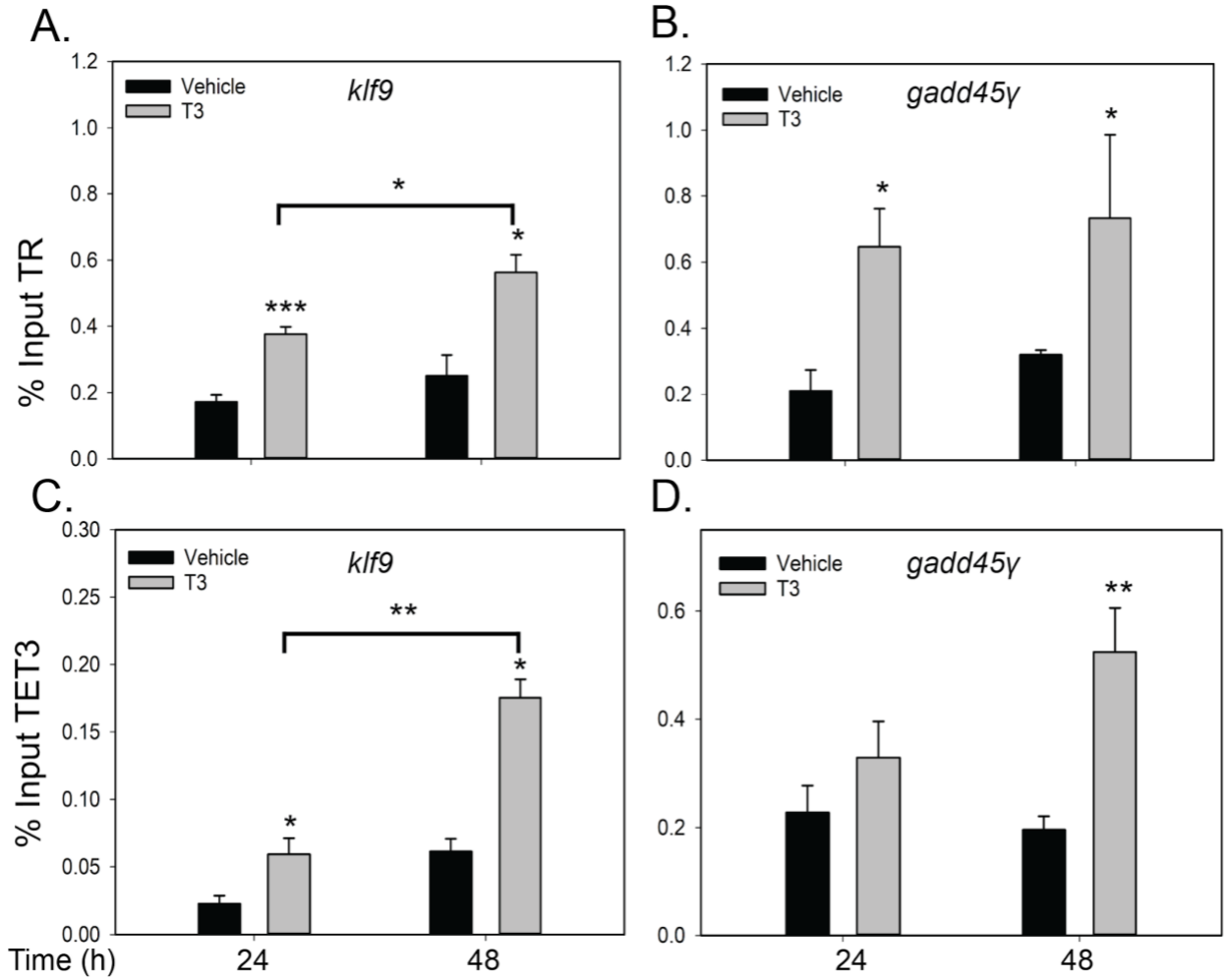


Figure 4.4. The association of TRs and TET3 within the *klf9* and *gadd45γ* TREs is enhanced by T_3. Targeted ChIP assays for TR and TET3 at the *klf9* and *gadd45γ* TREs were conducted on chromatin isolated from whole brains of pre-metamorphic *X. tropicalis* tadpoles treated with vehicle or 50 nM T_3 for 24 and 48 hr. Bars represent the mean ± SEM. Asterisks indicate statistically significant enrichment of TR or TET3 between treatments. (*, P< 0.05; ** P<0.01; ***, P < 0.001; Student's independent t-test)

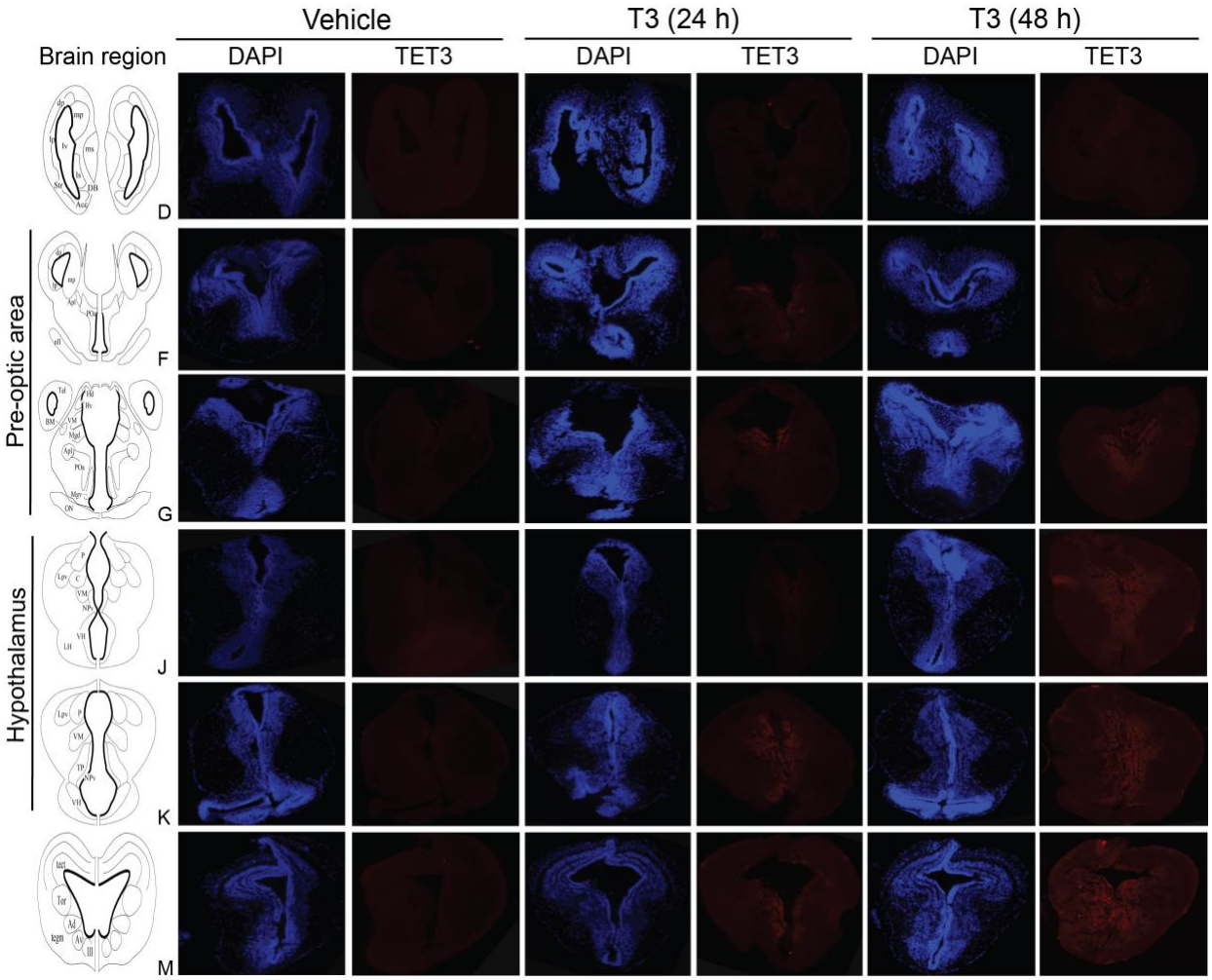


Figure 4.5. Illustration of TET3 immunoreactivity in T_3 treated pre-metamorphic *X. tropicalis* brain. We conducted IHC for TET3 on 16 µm transverse sections from pre-metamorphic *X. tropicalis* brains treated with vehicle or T_3 for 24 and 48 hr. Shown are rostral to caudal representative images taken at 10X magnification. Signal intensity increases with T_3 treatment with maximum signal observed around the preoptic area, thalamic nuclei, ventral hypothalamus and tegmentum in animals treated with T_3 for 48 hr (n= 5-6 brains/treatment/time point). Letters next to schematic diagrams represent the corresponding brain regions shown in Appendix A, Supplementary Fig 2.1.

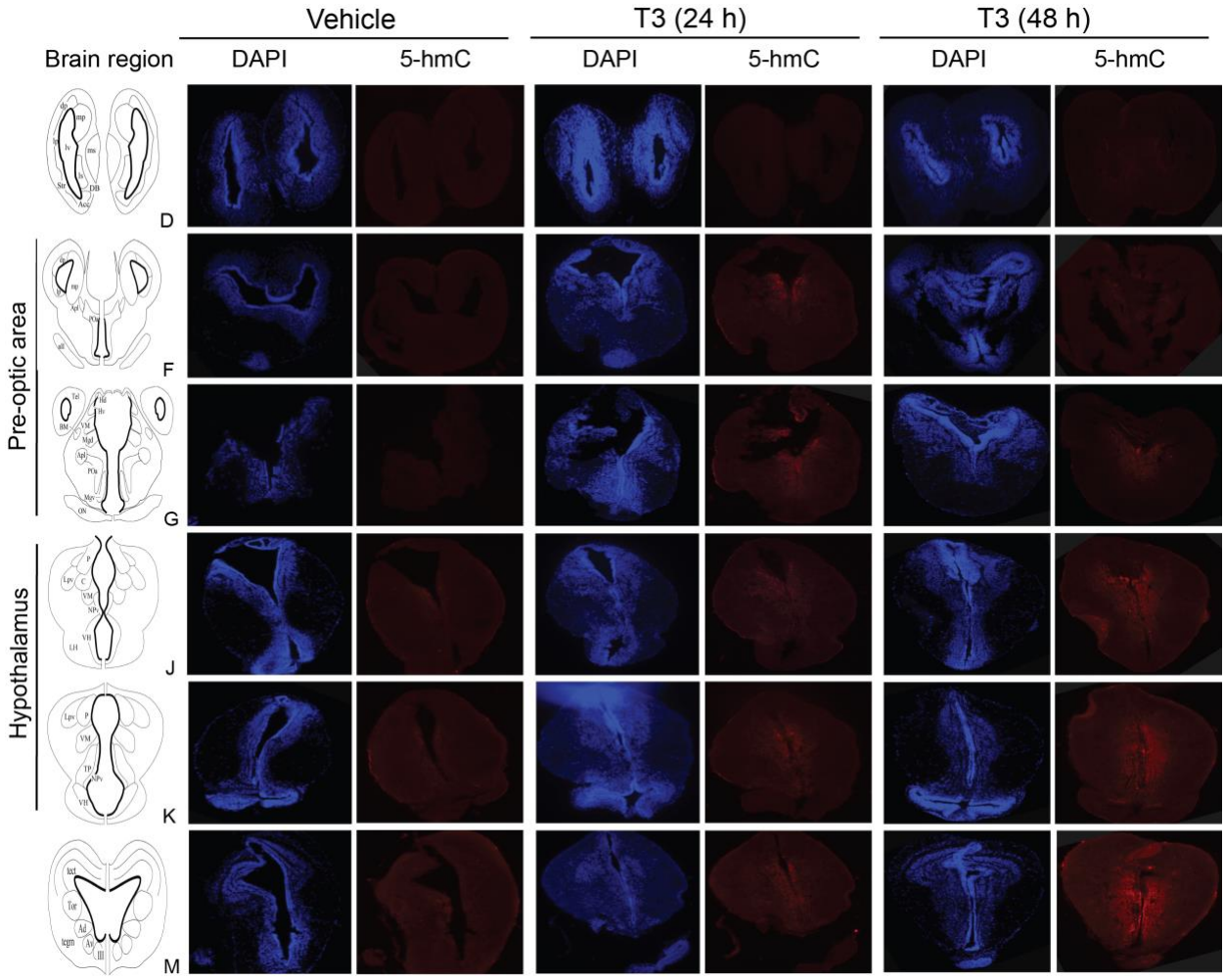


Figure 4.6. Illustration of 5-hmC immunoreactivity in T_3 treated pre-metamorphic *X. tropicalis* brain. We conducted IHC for 5-hmC on 16 µm transverse sections from pre-metamorphic *X. tropicalis* brains treated with vehicle or T_3 for 24 and 48 hr. Shown are rostral to caudal representative images taken at 10X magnification. Signal intensity increases with T_3 treatment with maximum signal observed around the preoptic area, thalamic nuclei, ventral hypothalamus and tegmentum in animals treated with T_3 for 48 hr (n= 5-6 brains/treatment/time point). Letters next to schematic diagrams represent the corresponding brain regions shown in Appendix A, Supplementary Fig 2.1.

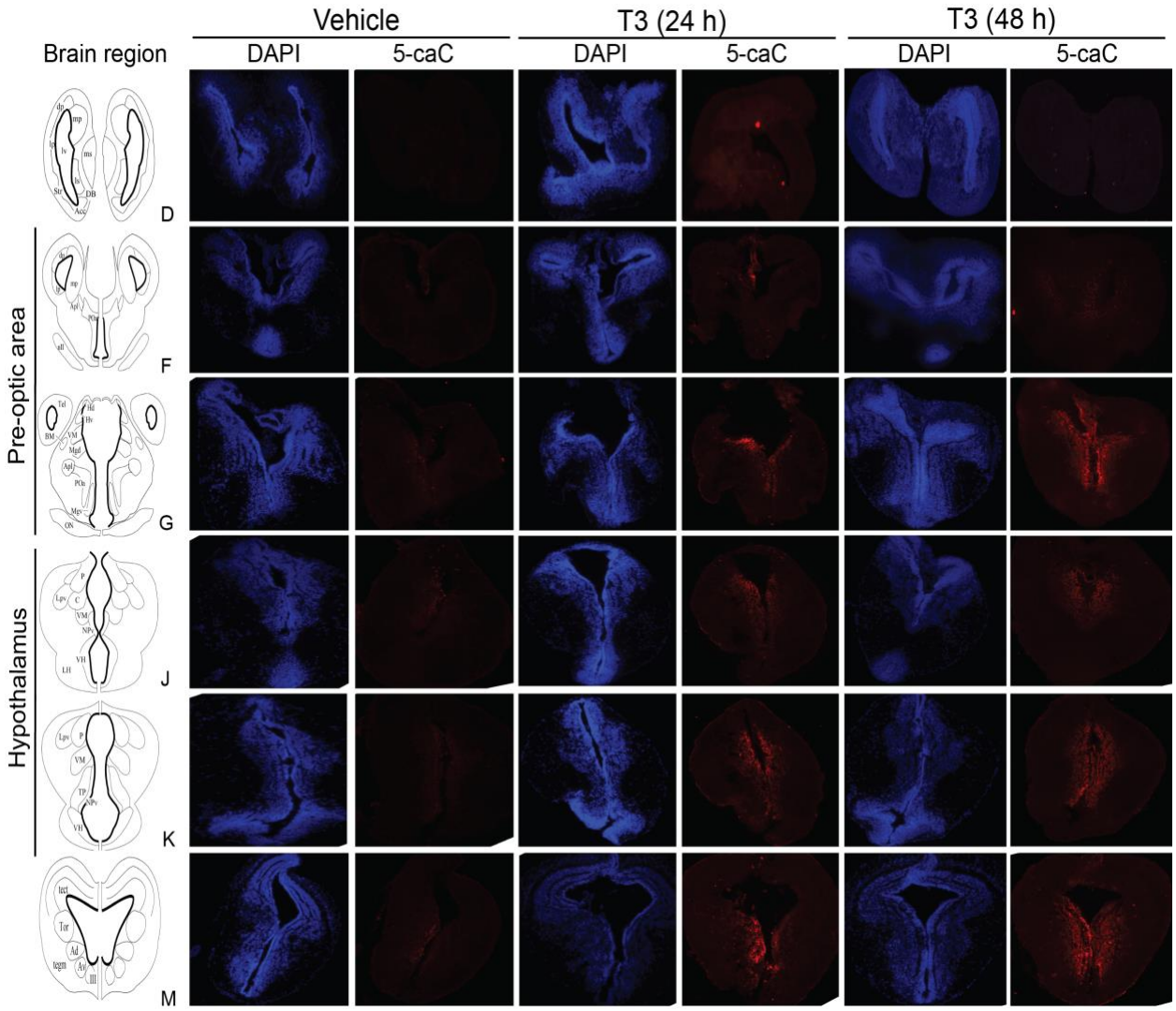


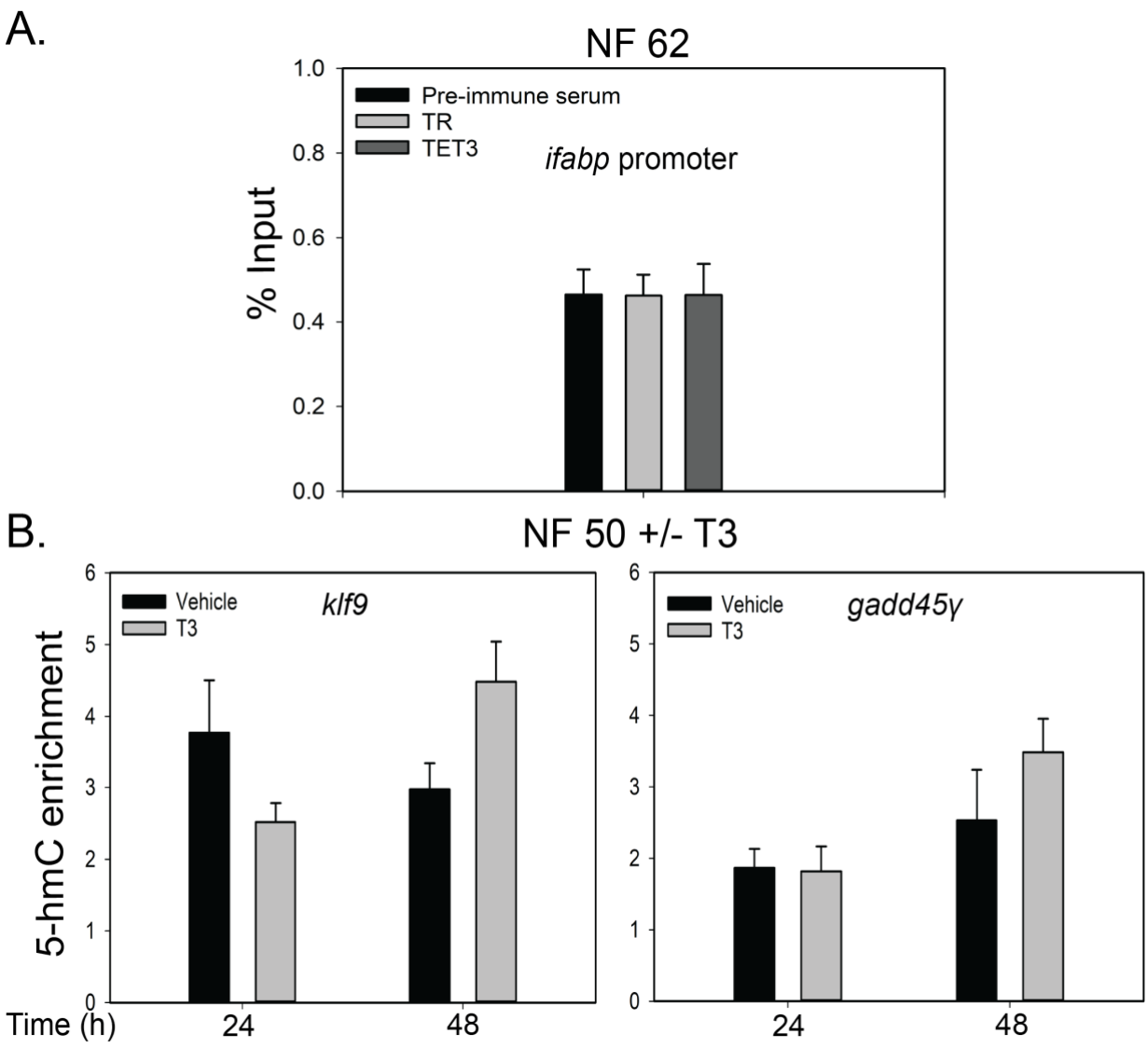
Figure 4.7. Illustration of 5-caC immunoreactivity in T_3 treated pre-metamorphic *X. tropicalis* brain. We conducted IHC for 5-caC on 16 µm transverse sections from pre-metamorphic *X. tropicalis* brains treated with vehicle or T_3 for 24 and 48 hr. Shown are rostral to caudal representative images taken at 10X magnification. Signal intensity increases with T_3 treatment with maximum signal observed around the preoptic area, thalamic nuclei, ventral hypothalamus and tegmentum in animals treated with T_3 for 48 hr (n= 5-6 brains/treatment/time point). Letters next to schematic diagrams represent the corresponding brain regions shown in Appendix A, Supplementary Fig 2.1.

Table 4.1.

Oligonucleotides used for targeted methylation and ChIP assays

Assay	Location	Primer sequence
Bisulfite sequencing	*dnmt3a*-TRE-A	Forward: TTTTTTTATTGTTAGAGGGTTTGAG Reverse: TCCCCTAATAAATACCAATATACCC
5-hmC chop qPCR	*dnmt3a*-TRE-A	Forward: CTTTGCCGGTGCCAACA Reverse: CTGCTTCCCACAATCCCTT
hmeDIP qPCR	*dnmt3a*-TRE-A	Forward: CACAGAAATGCAAGGGATTG Reverse: CTGTAGTGCTGCTCAGTG
hmeDIP qPCR	*dnmt3a*-TRE-B	Forward: TGACTCTGCGCAGTGA Reverse: AGGCTACGTACCCCTCTCAGTCT
ChIP qPCR	*dnmt3a*-TRE-A	Forward: CAGTAAAGGCACCCTGAG Reverse: CATAAAGATTTCTGCCGTACAC
ChIP qPCR	*Sox9* promoter	Forward: ACGTGAAAGTGGAGCAGTGT Reverse: TCTTCAGCAAAGGCACCCAA
ChIP qPCR	*klf9* TRE	Forward: CCGTCCCTTCTTTTGTGTACATT Reverse: GCTGTTCGTGCCACTTTGC
ChIP qPCR	*trb* TRE	Forward: CCCCTATCCTTGTTCGTCCTC Reverse: GCGCTGGGCTGTCCT
ChIP qPCR	*th/bZIP*	Forward: GGACGCACTAGGGTTAAGTAAGG Reverse: TCTCCCAACCCTACAGAGTTCAA
ChIP qPCR	*gadd45γ* TRE	Forward: AGTGTTTATGCACGGGAAGG Reverse: CCGGCAATTTGGTCGCTTATT
ChIP qPCR	*trb* exon 5	Forward: CCCCGAAAGTGAAACTCTAACTCT Reverse: CCACACCGAGTCCTCCATTTT
ChIP qPCR	*Ifabp* promoter	Forward: CCCTACATTGGTTGAGCCAGTTTT Reverse: TCAAAGGCCATGGTGATTGGT

Appendix C



Supplemental Figure 4.1. Targeted ChIP and hmeDIP assays. (A) The TRs and TET3 do not associate within the chromatin of *ifabp* promoter in the tadpole brain at metamorphic climax. Targeted ChIP analysis for TR and TET3 was conducted on whole brain chromatin isolated from *X. tropicalis* tadpoles at stage NF 62. Immunoprecipitated samples were amplified by qPCR using primers specific to *ifabp* promoter (negative control region). No significant TR and TET3 enrichment over the pre-immune serum is observed at the locus. ChIP signal is represented as a percentage of input for TR or TET3 serum or pre-immune serum (background control) (n=5/group). Bars represent the mean ± SEM. (B) Enrichment of 5-hmC at the *klf9* and *gadd45γ* TREs identified by hmeDIP assay. Assay was conducted on genomic DNA from T_3/Vehicle (5nM for 24 or 48 hr). No difference in enrichment was observed between treatments at either genomic region.

Supplemental Table 4.1.

Sequences of the *dnmt3a*-TRE-A locus

Genomic Region	Genomic Sequence
TRE-A	GGGTTAGCTGAGGACT
CpG island	CTTATTAGGGGAAACTGTACCGGCCGGAGCGGGCACGCT GGCACTTATTAGGGGAAACTGTACTGGCCGGAGCGGGCA CGCTGGCACTTATTAGGGGAAACTGTACCGGCCGGAGCG GGCACGCTGGCACTTATTAGGGGAAACTGTACCGGCCAG AGGGGGCACACTGGCACTTATTAGGGGAAACTGTACCGG CCGGAGCGGGCACGCTGGCACTTATTAGGGGAAACAGTA CCGGCCAGAGCGGGCA
Upstream shore	CTTTCTCTCTCTCTGCACAATGGGCTTTGCCGGTGCCAAC AGGGTACAGCCCAAACCCAGGATAGGCAGTCTCACAGAA ATGCAAGGGATTGTGGGAAGCAGCTTTTAACCTCTTCACT GCCAGAGGGCCTGAGGAAACGTACAGCACTGAGCAGCAC TACAGGCACCGACAGTAAAGGCACCCTGAGCCATGGCAA ATGGGGTGTACGGCAGAAATCTTTATGCCATTGTTAGTTT GTACTGGCCGGAGCGGGCACACTGGCACTTATGGGAAAC TGTACCGGCCAGAGGGGGCACACTGGCA
Downstream shore:	CTGGCACTTATTATGGGACACTATTATTATCGGGCACACT GGTACACTCAGGGCAAAAGGGGCCAATTAGCTTGGACTG GCACGGTTTTGATTTTTGGGTCTGATGGGAGGCTGTGCCA GGGGGTGACCCGGTTGGGTGCATGTGATGGAGCTGCGG GCTGATTAGGGGATTTGCCCCATGGGAAAGTGTGGTTGT GGGGTCCCAGGTGTGTCTGCTGGGGGGAGCATGAGAAT GACAGGACCTTGGG
Bisulfite sequencing amplicon	CTCTTCACTGCCAGAGGGCCTGAGGAAACGTACAGCACT GAGCAGCACTACAGGCACCGACAGTAAAGGCACCCTGAG CCATGGCAAATGGGGTGTACGGCAGAAATCTTTATGCCAT TGTTAGTTTGTACTGGCCGGAGCGGGCACACTGGCACTT ATGGGAAACTGTACCGGCCAGAGGGGGCACACTGGCACT TATTAGGGGAA
hmeDIP amplicon	CACAGAAATGCAAGGGATTGTGGGAAGCAGCTTTTAACCT CTTCACTGCCAGAGGGCCTGAGGAAACGTACAGCACTGA GCAGCACTACAGG
TET3 ChIP qPCR amplicon:	CAGTAAAGGCACCCTGAGCCATGGCAAATGGGGTGTACG GCAGAAATCTTTATG
5hmc-Chop-qPCR amplicon	CTTTGCCGGTGCCAACAGGGTACAGCCCAAACCCAGGAT AGGCAGTCTCACAGAAATGCAAGGGATTGTGGGAAGCAG

Author contributions

I generated all the data and figures presented in this chapter except for Fig 4.1 B. This screen shot of the IGV genome browser was obtained from analysis of MethylCap-seq data generated by Dr. Yasuhiro Kyono.

CHAPTER 5

CONCLUSIONS AND FUTURE DIRECTIONS

Introduction

Methylation of DNA is an epigenetic modification crucial to proper brain function and development[1,2]. The role of DNA methylation in early embryonic development has been studied extensively, although its role in post-embryonic development remains largely unexplored. Thyroid hormone (T_3) is a powerful signaling molecule with important and ancient roles in development, particularly development of the brain[3,4].

The work presented in this dissertation provides evidence to support the central hypothesis that T_3 modulates DNA demethylation in the developing brain. I investigated global and locus specific changes in DNA methylation, whether liganded TR can promote DNA demethylation around TRE regions, and the underlying mechanisms. My discoveries support that T_3 plays a role in inducing active DNA demethylation directly through locus-specific TET3 recruitment, or indirectly through activation of genes that encode DNA demethylation enzymes.

In this chapter, I summarize how the work presented in this dissertation improves our understanding T_3-mediated post-embryonic brain development through a novel role for T_3 in modulating DNA methylation. This is followed by a discussion of future directions that might be taken moving forward.

Summary

Using an amphibian model system, I discovered that tadpole neural cells show global and locus-specific, active DNA demethylation during metamorphosis, a process that is orchestrated by T_3[3]. Tadpole metamorphosis exhibits several similarities to mammalian postembryonic development[5], including remodeling of the lungs, intestine, and brain; all of which depend on the presence of plasma T_3 both during tadpole metamorphosis and mammalian post-embryonic development[5–7]. My studies suggesting a role for T_3 in modulating DNA demethylation, therefore, lay the groundwork for exploring a similar role for T_3 in mammals and other vertebrates.

We have known for decades that T_3 is essential for brain development[8–10]. The hormone induces gene regulation programs in neural cells[9,11], with the TRs directly regulating gene transcription, in part, through modification of chromatin structure and post-translational histone modifications[11–14].

Additionally, we have known that DNA methylation is critical for brain development[15,16] and that unmethylated DNA tends to be associated with acetylated histones within euchromatic regions and activated genes. By contrast, methylated DNA is associated with histone hypo-acetylation, heterochromatin and hence, repressed genes[17,18].

While the roles of these separate mechanisms (DNA methylation and T_3-dependent gene regulation) have been studied extensively, a mechanistic link between the two remains unexplored. To this end, I have discovered a novel role for T_3 in regulating DNA methylation. This suggests that together with other gene regulatory pathways like post translational histone modifications, DNA methylation can support the

gene regulation programs activated during metamorphosis through establishment and maintenance of the gene regulation patterns seen in adult cells. My work hence elucidates novel mechanisms by which liganded TRs modulate chromatin structure and gene transcription during brain development.

In chapter 2, I show that the key genes in DNA demethylation (*tet2, tet3, idh1/2/3, gadd45 α/ β/ γ* and *tdg*) are upregulated during spontaneous metamorphosis. Some of these key DNA demethylation genes have been studied individually, mostly in the mammalian brain [19–24]. My work provides the first comprehensive analysis of the expression of genes that code for enzymes that catalyze DNA demethylation during post-embryonic development of the brain of a vertebrate.

In chapters 2 and 4, I show that the DNA demethylation intermediates, 5-hmC and 5-caC are highest at metamorphic climax, can be induced by exogenous T_3 in pre-metamorphic tadpoles, and are enriched at genomic regions containing TREs in the tadpole brain. Although some studies have reported the presence of these intermediates in the vertebrate brain[2,25–27], my work is the first to identify DNA demethylation intermediates in a post-embryonic developmental context and show a positive correlation between increasing T_3 levels and distribution of key DNA demethylation intermediates.

Future studies

Identification of TET3 target genes in the post-embryonic tadpole brain

I provide evidence that mRNA levels of genes encoding enzymes involved in DNA demethylation (*tet2, tet3, gadd45α, gadd45β, gadd45γ, idh1, idh2, dh3a and tdg)*

increase with progress in metamorphosis, and show highest expression at metamorphic climax, when circulating T_3 is highest. Although some of these enzymes have been shown to play an important role in embryonic development, my work supports that these enzymes are also important for post-embryonic brain development.

For instance, a recent report by Xu et al.,[28] showed that in *Xenopus*, one of these DNA demethylation enzymes, TET3, plays an essential role during embryonic development of the central nervous system by directly regulating a group of key developmental genes, including *sox9, pax6, rx* and *six3*. Depletion of *tet3* mRNA using morpholinos in early *Xenopus* embryos lead to severe neural and eye development phenotypes, which were rescued by replacement of *tet3* mRNA.

I provide evidence here that several direct TR target genes including *dnmt3a*, *klf9*, *trb*, *th/bzip* and *gadd45γ* are targets of TET3 during post embryonic development in the tadpole brain. Apart from a recent study identifying protein-protein interactions between TRα and TET3 *in vitro*[29], virtually nothing is known mechanisms of TET recruitment. I have shown, for the first time, *in vivo*, that TET3 is recruited around TREs of several known TR-target genes in a T_3-dependent manner. This is the only study showing a molecular mechanism by which TET3 is recruited to a specific genomic locus.

Conducting ChIP-sequencing analysis for TR and TET3 will further help us understand whether TET3 predominantly associates around TREs and if T_3 is necessary for TET3 recruitment around TREs genome-wide hence providing more mechanistic details about the interaction between TR and TET3.

Identifying the role of DNA demethylation around the TREs of TR target genes in T_3-mediated gene activation.

I have shown that the regions flanking the TRE of a direct T_3 target gene, *dnmt3a,* undergo DNA demethylation during spontaneous metamorphosis and upon exogenous T_3 treatment, concurrently, with an increase in the level of *dnmt3a* mRNA reported by[30] under the same conditions. A lack of methylated CGs and presence of 5-hmC in gene regulatory regions are predominantly associated with actively transcribed genes[2,26,31]. Together, these data suggest that DNA demethylation observed around the *dnmt3a* TRE could a) promote an open chromatin structure thus maintaining the gene in an active configuration or b) drive the activation of the gene.

DNA demethylation around the regulatory regions of activated genes reported by most studies, including mine, are correlational. It should be noted that the observed T_3-dependent induction of *dnmt3a* could be due to liganded TR-mediated histone modifications[14,32], transcription factor recruitment to the regulatory locus[33], long range chromatin interactions[33], DNA demethylation or any combination of the above mechanisms. It is therefore necessary to identify if DNA demethylation around the TREs is necessary and sufficient for target gene regulation.

Using shRNA-mediated knockdown of TET enzymes to eliminate DNA demethylation globally in *Xenopus* neural cells followed by T_3 treatment and targeted methylation assays at regions surrounding the TRE, will help identify whether DNA demethylation is necessary for target gene activation. Targeted DNA demethylation by conjugation of transcription activator-like effectors (TALE) proteins with TET 1/2/3

catalytic domain specifically to the TREs of target genes can specifically test if DNA demethylation is necessary for activation of the target gene, like previously published[34].

However, the biggest challenge with these proposed experiments is their lack of feasibility in an *in vivo* model such as the *Xenopus* brain. Currently, there are no cell lines derived from the *Xenopus* brain. Establishment of a *Xenopus* neuronal cell line that exhibits the patterns of DNA demethylation observed *in vivo* would serve as an excellent model to carry out the experiments mentioned.

Identifying T_3-dependent DNA demethylation in the tadpole brain throughout the genome

My findings show that T_3 treatment induces DNA demethylation around TREs, often flanking (with 300 bp) of the identified TRE. The observed DNA demethylation is mediated by T_3-dependent TET3 recruitment within the genomic regions, as shown at the *dnmt3a*, *klf9* and *gadd45γ*-associated TREs. These data, collectively lead me to hypothesize that 1) T_3 induces genome-wide DNA demethylation in pre-metamorphic tadpole brain, and 2) genomic sites of DNA demethylation include TREs.

In pre-metamorphic tadpoles with and without T_3 treatment, identifying methylation and TR binding sites, and conducting genome-wide correlational analyses of TR binding and DNA demethylation will specifically test whether 1) T_3 induces DNA demethylation at sites throughout the genome 2) T_3 induces DNA demethylation around TR binding sites 3) this phenomenon of T_3-induced DNA demethylation is observed genome-wide.

Concluding remarks

Thyroid hormone and DNA methylation both play crucial roles in post-embryonic brain development. This work presented in my dissertation investigates the relationship between T_3 and DNA demethylation, a question that has not been explored. My discoveries support the central hypothesis that T_3 modulates DNA methylation in the post-embryonic development of tadpole brain. Our discoveries suggest that this modulation could be indirect through regulation of genes involved in DNA demethylation or direct and locus specific, around the regions of TREs. This work is a contribution toward the field of nuclear hormone receptors and their roles in gene regulation through epigenetic changes and helped contribute to the knowledge of mechanisms of T_3-mediated gene regulation in the developing brain.

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Appendix D

Supplemental methods 5.1

Chromatin immunoprecipitation (ChIP)- sequencing

We prepared chromatin from the whole brain of untreated tadpoles at metamorphic climax (NF stage 62; 5 brains pooled per replicate) as described in chapters 3 and 4, sheared the chromatin using a Covaris M220 ultrasonicator sonicator (Covaris, Woburn, MA) for 30 min at peak power 75 W, duty factor 8 and 200 cycles to obtain shared chromatin fragments of ~250-400 bp. We quantified the sheared chromatin using a Nanodrop and conducted ChIP assay on 5 µg of total chromatin for immunoprecipitation reactions, and 50 ng of chromatin for input reactions in a 500 µL reaction volume using Magna ChIP A kit (Millipore, Catalog # 17-610) according to manufacturer's protocol. We validated individual immunoprecipitated samples (8 samples tested) using targeted qPCR assays for *klf9* TRE, *trb* TRE and *th/bzip* TRE (positive control loci) and *ifabp* promoter and *trb* exon 5 loci (negative control loci). We selected 3 immunoprecipitated samples with highest signal/noise ratio, pooled them into one biological replicate and submitted to the University of Michigan DNA sequencing core along with input for library preparation and Illumina sequencing.

ChIP-sequencing analysis

<u>Preprocessing and QC</u>

Raw sequencing data (*.fastq) files were obtained from the University of Michigan DNA Sequencing Core. Quality-trimming, and adapter removal was performed on all raw sequencing data using Trim Galore v0.4.0, which makes use of Cutadapt

v1.8.1. Default parameters were used with --stringency flag value set to 6. Quality assessments were performed on all raw sequencing and processed data using FastQC v0.11.7.

Alignment

Quality control processed reads were aligned to the *Xenopus tropicalis* genome (v4.1) using hisat2 and the --dta option with all other defaults. Uniquely mapped reads selected for further analysis, see command below.

```
hisat2 --dta --new-summary -x {params.fasta_basename} -U {input} -p {threads}
2> {output.summary} | perl -lane 'if($_ !~ m/NH:i:1/){{print}} | samtools view -@ {threads} -Sb
- > {output.bam}
```

Post-processing for viewing in IGV

Aligned reads in binary alignment format (.bam files) were sorted and indexed using the
samtools sort and samtools index commands from samtools v1.8. Read depth-normalized bigwig files were created from sorted alignment files for ease of viewing in genome browsers using the bamCoverage command from deepTools v3.0.2.

Peak calling

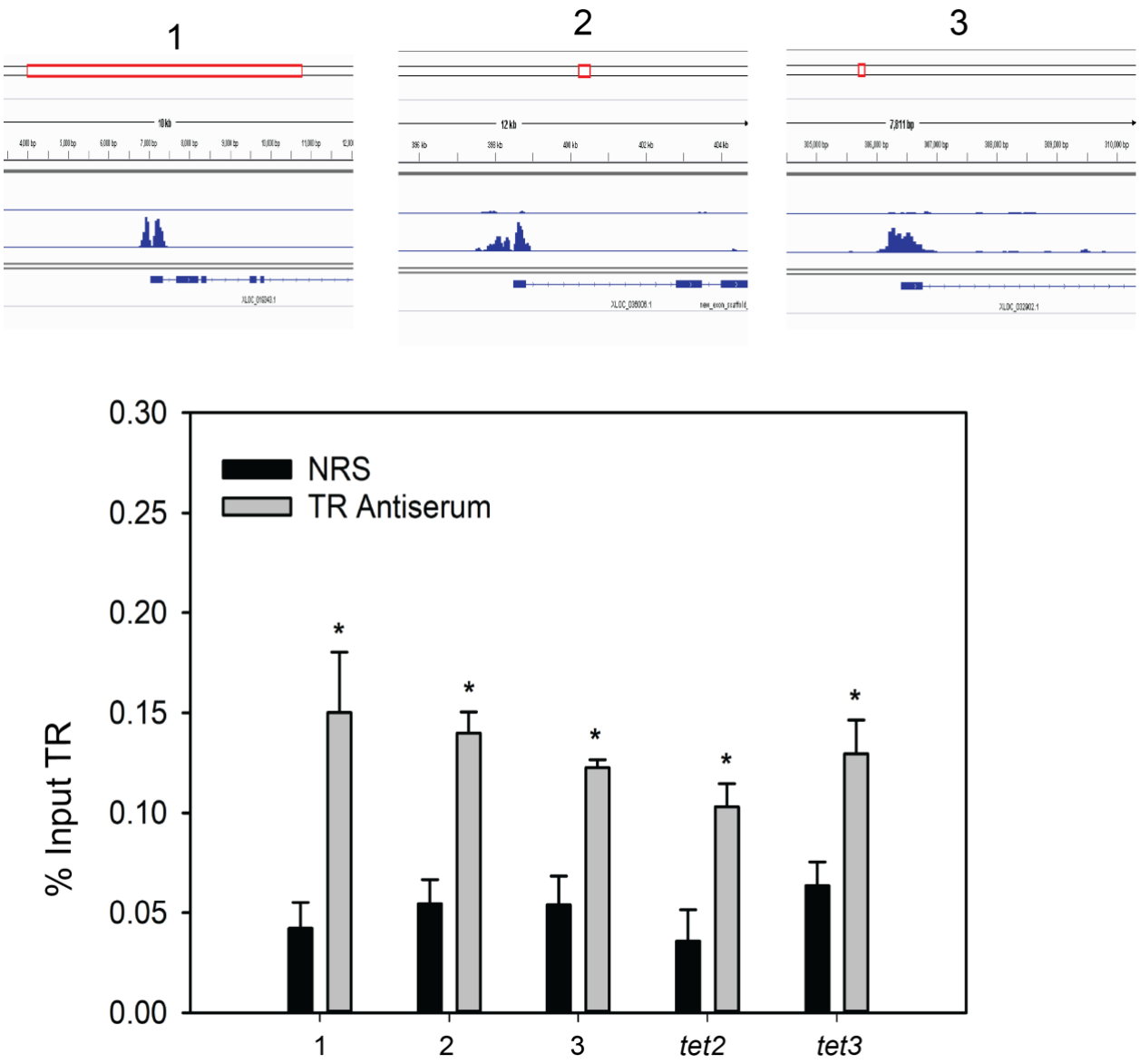
Peaks were called using macs2 v2.1.0 and the callpeak function with the following flags set, -g 1.7e9 -B --keep-dup 1.

Supplemental Table 5.1.
Oligonucleotides used for quantitative real time PCR analysis of ChIP assays

Target	Primer sequence
Validation-1	Forward: CGCTCTTTGCCTCTCTCAATA Reverse: GTATTGGTTGCGCTGAGTAAAG
Validation-2	Forward: CTAGATCACGCAGCCATCTTTC Reverse: AGGGATCCTCAAATACCGAGAG
Validation-3	Forward: GTGGTCAAGCAGTGGACTTT Reverse: GACAGCTTCTGACTGGGAATAC

Supplemental Table 5.2.
Genomic coordinates of regions selected for targeted validation in *X. tropicalis* build 4.1

Target	Genomic coordinates (Build 4.1)
Validation-1	scaffold_2907:6740-7395
Validation-2	scaffold_657:397831-398924
Validation-3	Scaffold_956: 226247- 226963



Supplemental Figure 5.1. Targeted validation of TR ChIP-sequencing on brain chromatin from *X. tropicalis* at metamorphic climax. Top panel: Genome browser views showing location of TR peaks identified by ChIP-seq on chromatin from *X. tropicalis* brain at metamorphic climax. Top track=input, bottom track=TR immunoprecipitation. Partial gene locus is shown; bars represent exons while lines represent intron. Arrows on the gene indicate the direction of transcription. Bottom panel: Targeted ChIP assays for TR at the genomic locations shown in the top panel, *tet2* and *tet3* peaks (shown in fig 3.2) using chromatin isolated from the brains of tadpoles at metamorphic climax (NF stage 62). Bars represent the mean ± SEM of the ChIP signal expressed as a percentage of input for TR. (n= 4/group). Asterisks indicate statistically significant differences in TR ChIP signal and NRS (*, P < .05)

Supplemental Table 5.3

Genomic coordinates of identified TR peaks

Chromosome	Start	End	Length	Abs_summit	Pileup	Fold enrichment	Name
scaffold_7921	66226	66911	686	66745	175	68.7843	trChip_vs_input_peak_6138
scaffold_14923	1450	2133	684	1960	149	58.62299	trChip_vs_input_peak_1050
scaffold_11144	1	625	625	221	170	57.03921	trChip_vs_input_peak_389
scaffold_15169	2455	4202	1748	3445	204	50.78809	trChip_vs_input_peak_1090
scaffold_14923	1	1278	1278	290	100	39.47281	trChip_vs_input_peak_1049
scaffold_828	293562	294609	1048	293977	169	36.60909	trChip_vs_input_peak_6282
scaffold_2907	6740	7395	656	7122	161	35.46607	trChip_vs_input_peak_2806
scaffold_11144	741	1191	451	967	188	29.23215	trChip_vs_input_peak_390
scaffold_1243	13618	14263	646	13849	121	28.48919	trChip_vs_input_peak_647
scaffold_15024	2622	4903	2282	4130	70	27.74821	trChip_vs_input_peak_1077
scaffold_15024	5069	6083	1015	5732	62	24.62165	trChip_vs_input_peak_1078
scaffold_2460	10581	11281	701	10900	126	21.67899	trChip_vs_input_peak_2260
scaffold_657	397831	398924	1094	398564	75	20.47697	trChip_vs_input_peak_5486
scaffold_6278	3476	4012	537	3780	104	19.35839	trChip_vs_input_peak_5328
scaffold_89	1052308	1052882	575	1052642	101	18.80529	trChip_vs_input_peak_6473
scaffold_566	306082	306777	696	306357	120	18.71476	trChip_vs_input_peak_5031
scaffold_1022	117031	117563	533	117281	117	18.37155	trChip_vs_input_peak_129
scaffold_470	164019	164589	571	164320	73	18.33326	trChip_vs_input_peak_4427
scaffold_178	1625502	1626122	621	1625850	128	18.23899	trChip_vs_input_peak_1477
scaffold_1148	140421	141002	582	140742	82	17.87385	trChip_vs_input_peak_460
scaffold_676	319448	319895	448	319693	61	17.3729	trChip_vs_input_peak_5600
scaffold_174	851309	851847	539	851621	100	17.24077	trChip_vs_input_peak_1415
scaffold_1513	16477	16969	493	16671	89	17.13981	trChip_vs_input_peak_1089
scaffold_1100	110817	111803	987	111102	128	16.7968	trChip_vs_input_peak_370
scaffold_96	939740	940323	584	940091	106	16.54942	trChip_vs_input_peak_6669
scaffold_883	52857	53432	576	53085	60	16.43546	trChip_vs_input_peak_6461
scaffold_853	191833	192548	716	192256	124	16.27597	trChip_vs_input_peak_6374
scaffold_956	226247	226963	717	226662	128	15.56596	trChip_vs_input_peak_6656
scaffold_25	3554652	3555358	707	3554976	109	15.55263	trChip_vs_input_peak_2301
scaffold_92	1199745	1200419	675	1200080	127	15.4453	trChip_vs_input_peak_6569
scaffold_448	160644	161413	770	161001	173	15.36601	trChip_vs_input_peak_4277
scaffold_7921	64423	64934	512	64635	38	15.24198	trChip_vs_input_peak_6137
scaffold_1143	152625	153346	722	153121	143	15.15492	trChip_vs_input_peak_453
scaffold_650	553471	554622	1152	554086	81	14.36222	trChip_vs_input_peak_5467
scaffold_398	1100399	1101040	642	1100725	83	14.33886	trChip_vs_input_peak_3859

scaffold_325	221375	222404	1030	221666	65	14.21294	trChip_vs_input_peak_3167
scaffold_340	99328	100046	719	99768	124	14.05349	trChip_vs_input_peak_3333
scaffold_556	77289	77893	605	77569	71	14.01164	trChip_vs_input_peak_4969
scaffold_2203	9381	9799	419	9575	38	13.82083	trChip_vs_input_peak_1997
scaffold_638	365084	365923	840	365361	113	13.75597	trChip_vs_input_peak_5372
scaffold_303	10722	11461	740	11144	103	13.5416	trChip_vs_input_peak_2965
scaffold_1287	19943	20675	733	20345	78	13.48535	trChip_vs_input_peak_708
scaffold_42	1936015	1936665	651	1936362	118	13.37892	trChip_vs_input_peak_4083
scaffold_321	182971	183453	483	183190	69	13.25432	trChip_vs_input_peak_3140
scaffold_109	1406359	1407264	906	1406976	92	13.14904	trChip_vs_input_peak_303
scaffold_1326	87161	87897	737	87523	80	12.89755	trChip_vs_input_peak_793
scaffold_1518	29357	29948	592	29630	74	12.80255	trChip_vs_input_peak_1093
scaffold_77	578650	579291	642	579043	75	12.67756	trChip_vs_input_peak_6023
scaffold_828	219729	220926	1198	220498	127	12.66181	trChip_vs_input_peak_6281
scaffold_179	695205	696255	1051	695920	88	12.58349	trChip_vs_input_peak_1487
scaffold_491	857254	857777	524	857496	88	12.58349	trChip_vs_input_peak_4601
scaffold_363	996016	996410	395	996219	57	12.49016	trChip_vs_input_peak_3515
scaffold_785	189713	190256	544	190027	57	12.49016	trChip_vs_input_peak_6100
scaffold_483	849370	849903	534	849669	87	12.4421	trChip_vs_input_peak_4537
scaffold_721	37737	38441	705	38121	85	12.15933	trChip_vs_input_peak_5841
scaffold_735	344678	345241	564	345017	70	12.11975	trChip_vs_input_peak_5893
scaffold_6020	3296	3912	617	3426	30	12.06316	trChip_vs_input_peak_5238
scaffold_398	860412	868493	8082	861343	73	12.05692	trChip_vs_input_peak_3848
scaffold_153	131788	132229	442	131996	33	12.04893	trChip_vs_input_peak_1102
scaffold_1085	13130	13568	439	13356	62	11.99787	trChip_vs_input_peak_281
scaffold_63	2998488	2999096	609	2998804	69	11.94905	trChip_vs_input_peak_5344
scaffold_421	1027368	1027981	614	1027574	84	11.91056	trChip_vs_input_peak_4097
scaffold_924	22	432	411	236	76	11.9094	trChip_vs_input_peak_6585
scaffold_77	1492865	1493528	664	1493168	111	11.78716	trChip_vs_input_peak_6027
scaffold_159	1180709	1181149	441	1180966	46	11.6441	trChip_vs_input_peak_1203
scaffold_156	1982102	1982566	465	1982381	81	11.59378	trChip_vs_input_peak_1171
scaffold_827	260044	260861	818	260400	88	11.58849	trChip_vs_input_peak_6274
scaffold_251	1308296	1308819	524	1308549	80	11.45239	trChip_vs_input_peak_2334
scaffold_233	166905	167614	710	167166	73	11.44539	trChip_vs_input_peak_2136
scaffold_316	719414	720018	605	719713	121	11.3844	trChip_vs_input_peak_3101
scaffold_738	313138	313521	384	313332	38	11.38331	trChip_vs_input_peak_5899
scaffold_386	156437	157213	777	156640	67	11.34308	trChip_vs_input_peak_3759
scaffold_460	540742	541360	619	540973	54	11.33281	trChip_vs_input_peak_4363
scaffold_88	107542	108498	957	108035	86	11.32807	trChip_vs_input_peak_6439
scaffold_5763	1	406	406	182	72	11.29073	trChip_vs_input_peak_5070

scaffold_7408	1497	2215	719	1958	65	11.26624	trChip_vs_input_peak_5918
scaffold_72	1277049	1278048	1000	1277733	81	11.26492	trChip_vs_input_peak_5834
scaffold_4	4715673	4716176	504	4715845	71	11.20976	trChip_vs_input_peak_3883
scaffold_315	823763	824264	502	823996	71	11.13606	trChip_vs_input_peak_3095
scaffold_108	1524330	1524877	548	1524562	77	11.02823	trChip_vs_input_peak_261
scaffold_134	1330983	1331502	520	1331279	54	11.00908	trChip_vs_input_peak_814
scaffold_515	144011	144384	374	144208	30	10.98579	trChip_vs_input_peak_4749
scaffold_871	184041	184479	439	184258	30	10.98579	trChip_vs_input_peak_6427
scaffold_183	651382	651762	381	651563	50	10.98273	trChip_vs_input_peak_1539
scaffold_411	920826	921377	552	921090	103	10.94522	trChip_vs_input_peak_4012
scaffold_392	172250	173078	829	172834	83	10.93745	trChip_vs_input_peak_3806
scaffold_661	75023	75552	530	75246	80	10.91358	trChip_vs_input_peak_5505
scaffold_645	422407	422838	432	422641	69	10.89838	trChip_vs_input_peak_5414
scaffold_507	661780	662534	755	662234	78	10.85279	trChip_vs_input_peak_4717
scaffold_209	1459701	1460438	738	1460114	95	10.79308	trChip_vs_input_peak_1833
scaffold_371	988918	989426	509	989241	62	10.7653	trChip_vs_input_peak_3618
scaffold_150	1651257	1652446	PTEN:1190	1651699	68	10.67206	trChip_vs_input_peak_1072
scaffold_529	841589	842122	534	841833	55	10.66477	trChip_vs_input_peak_4825
scaffold_893	17902	18315	414	18144	74	10.60406	trChip_vs_input_peak_6486
scaffold_113	1149164	1149784	621	1149354	64	10.59054	trChip_vs_input_peak_425
scaffold_1288	8936	9462	527	9196	61	10.58344	trChip_vs_input_peak_710
scaffold_827	285552	286068	517	285804	82	10.57315	trChip_vs_input_peak_6275
scaffold_1583	26465	26901	437	26729	99	10.52425	trChip_vs_input_peak_1194
scaffold_612	300437	301383	947	300808	86	10.49798	trChip_vs_input_peak_5272
scaffold_158	1095535	1096771	1237	1096166	98	10.41901	trChip_vs_input_peak_1188
scaffold_92	228601	229387	787	228958	33	10.35525	trChip_vs_input_peak_6564
scaffold_147	1814066	1814948	883	1814656	89	10.3373	trChip_vs_input_peak_1015
scaffold_669	109311	110070	760	109612	47	10.33668	trChip_vs_input_peak_5534
scaffold_781	143816	144388	573	144193	58	10.33379	trChip_vs_input_peak_6084
scaffold_827	370842	371438	597	371219	53	10.28389	trChip_vs_input_peak_6280
scaffold_667	41097	41642	546	41449	40	10.25793	trChip_vs_input_peak_5529
scaffold_191	752880	753441	562	753169	59	10.24204	trChip_vs_input_peak_1619
scaffold_34	1850050	1851226	1177	1850334	75	10.23991	trChip_vs_input_peak_3319
scaffold_26	1898928	1899761	834	1899289	56	10.23943	trChip_vs_input_peak_2402
scaffold_1996	48900	49323	424	49129	96	10.20852	trChip_vs_input_peak_1687
scaffold_1117	23346	24063	718	23816	47	10.1901	trChip_vs_input_peak_397
scaffold_728	430572	431205	634	430972	31	10.18898	trChip_vs_input_peak_5868
scaffold_547	611737	612392	656	611983	71	10.1799	trChip_vs_input_peak_4928
scaffold_111	2516888	2517680	793	2517385	38	10.11884	trChip_vs_input_peak_382
scaffold_3628	9590	10065	476	9843	89	10.11851	trChip_vs_input_peak_3504

scaffold_279	947624	947949	326	947784	48	10.0965	trChip_vs_input_peak_2627
scaffold_1240	58285	58783	499	58469	64	10.05339	trChip_vs_input_peak_645
scaffold_195	1795654	1796874	1221	1795969	64	10.05339	trChip_vs_input_peak_1646
scaffold_2202	7159	7575	417	7371	64	10.05339	trChip_vs_input_peak_1996
scaffold_321	859743	860288	546	859979	76	10.026	trChip_vs_input_peak_3143
scaffold_535	281649	282347	699	281997	27	9.92265	trChip_vs_input_peak_4857
scaffold_774	140915	141396	482	141181	33	9.91513	trChip_vs_input_peak_6060
scaffold_760	185253	185738	486	185509	45	9.90599	trChip_vs_input_peak_6000
scaffold_2067	21747	22221	475	21971	63	9.89872	trChip_vs_input_peak_1803
scaffold_191	1664549	1665045	497	1664804	75	9.89579	trChip_vs_input_peak_1624
scaffold_439	597267	597796	530	597464	81	9.89464	trChip_vs_input_peak_4206
scaffold_1080	197635	198282	648	197991	93	9.8928	trChip_vs_input_peak_271
scaffold_107	1248479	1249002	524	1248768	51	9.84607	trChip_vs_input_peak_227
scaffold_292	1443703	1444165	463	1443940	62	9.80854	trChip_vs_input_peak_2812
scaffold_43	3294706	3295214	509	3294913	73	9.78234	trChip_vs_input_peak_4172
scaffold_853	198199	198607	409	198403	50	9.71256	trChip_vs_input_peak_6375
scaffold_1	5525571	5526123	553	5525792	103	9.70474	trChip_vs_input_peak_26
scaffold_135	759575	760228	654	759880	71	9.70096	trChip_vs_input_peak_835
scaffold_239	335096	336010	915	335494	57	9.67498	trChip_vs_input_peak_2171
scaffold_82	235437	235967	531	235744	79	9.65331	trChip_vs_input_peak_6234
scaffold_891	239930	240327	398	240149	67	9.61435	trChip_vs_input_peak_6481
scaffold_166	306882	307296	415	307062	47	9.60792	trChip_vs_input_peak_1297
scaffold_1193	79972	80354	383	80155	44	9.55322	trChip_vs_input_peak_530
scaffold_92	2935375	2936134	760	2935769	63	9.54029	trChip_vs_input_peak_6579
scaffold_661	291507	292297	791	292084	67	9.52845	trChip_vs_input_peak_5510
scaffold_174	1075716	1076536	821	1076309	72	9.50516	trChip_vs_input_peak_1417
scaffold_69	1874688	1875495	808	1875179	72	9.50516	trChip_vs_input_peak_5677
scaffold_321	968034	968685	652	968383	79	9.50016	trChip_vs_input_peak_3145
scaffold_30	1168788	1169232	445	1169020	45	9.47835	trChip_vs_input_peak_2913
scaffold_515	801367	801807	441	801552	43	9.47529	trChip_vs_input_peak_4765
scaffold_516	507083	507489	407	507276	43	9.47529	trChip_vs_input_peak_4769
scaffold_205	1402587	1403175	589	1402809	26	9.45634	trChip_vs_input_peak_1787
scaffold_398	934637	937045	2409	936730	61	9.44304	trChip_vs_input_peak_3856
scaffold_1659	12985	13574	590	13203	34	9.43018	trChip_vs_input_peak_1295
scaffold_980	152740	153201	462	152945	77	9.41198	trChip_vs_input_peak_6720
scaffold_4	6060483	6061439	957	6060863	46	9.40776	trChip_vs_input_peak_3887
scaffold_873	251585	251998	414	251784	54	9.38854	trChip_vs_input_peak_6429
scaffold_418	127803	128194	392	128003	71	9.37496	trChip_vs_input_peak_4055
scaffold_233	1161222	1161670	449	1161442	83	9.3419	trChip_vs_input_peak_2139
scaffold_130	1870138	1870539	402	1870369	67	9.34164	trChip_vs_input_peak_755

scaffold_529	654168	654734	567	654503	55	9.34136	trChip_vs_input_peak_4820
scaffold_2448	9689	10079	391	9907	43	9.34092	trChip_vs_input_peak_2233
scaffold_393	120797	121314	518	121092	65	9.33158	trChip_vs_input_peak_3811
scaffold_748	329942	330343	402	330141	59	9.28005	trChip_vs_input_peak_5934
scaffold_76	2267298	2267777	480	2267465	59	9.28005	trChip_vs_input_peak_5969
scaffold_101	1559534	1560567	1034	1559896	87	9.26134	trChip_vs_input_peak_91
scaffold_618	335143	335799	657	335489	65	9.2482	trChip_vs_input_peak_5297
scaffold_2290	10639	11151	513	10931	70	9.24475	trChip_vs_input_peak_2087
scaffold_86	2942879	2943440	562	2943214	81	9.21909	trChip_vs_input_peak_6391
scaffold_17	5157916	5158918	1003	5158373	70	9.21197	trChip_vs_input_peak_1358
scaffold_473	195889	196628	740	196356	62	9.1956	trChip_vs_input_peak_4441
scaffold_127	740217	740911	695	740549	36	9.16663	trChip_vs_input_peak_688
scaffold_851	51794	52517	724	52175	63	9.15094	trChip_vs_input_peak_6366
scaffold_545	457924	458509	586	458286	47	9.14123	trChip_vs_input_peak_4918
scaffold_235	1	356	356	111	69	9.11454	trChip_vs_input_peak_2143
scaffold_448	697377	697965	589	697645	74	9.04998	trChip_vs_input_peak_4286
scaffold_16	4536804	4537241	438	4537025	63	9.0488	trChip_vs_input_peak_1235
scaffold_55	2399979	2400453	475	2400250	52	9.04714	trChip_vs_input_peak_4945
scaffold_90	2125153	2125599	447	2125277	52	9.04714	trChip_vs_input_peak_6505
scaffold_1366	56651	57100	450	56878	70	9.0445	trChip_vs_input_peak_857
scaffold_1099	127782	128303	522	127911	22	8.98886	trChip_vs_input_peak_311
scaffold_2659	9221	9711	491	9433	22	8.98886	trChip_vs_input_peak_2469
scaffold_103	542290	542956	667	542652	95	8.95822	trChip_vs_input_peak_138
scaffold_528	443900	444392	493	444140	95	8.95822	trChip_vs_input_peak_4813
scaffold_363	102272	102975	704	102503	46	8.95079	trChip_vs_input_peak_3506
scaffold_1071	1852	2346	495	2149	35	8.91888	trChip_vs_input_peak_236
scaffold_1	2029098	2029456	359	2029251	51	8.87644	trChip_vs_input_peak_13
scaffold_111	578441	580028	1588	578940	52	8.84093	trChip_vs_input_peak_375
scaffold_4	4124696	4125484	789	4125111	52	8.84093	trChip_vs_input_peak_3877
scaffold_39	474042	474522	481	474301	83	8.84037	trChip_vs_input_peak_3784
scaffold_989	187194	187567	374	187365	83	8.84037	trChip_vs_input_peak_6727
scaffold_1257	61397	62065	669	61603	40	8.82925	trChip_vs_input_peak_668
scaffold_53	2546846	2547510	665	2547174	40	8.82925	trChip_vs_input_peak_4841
scaffold_539	114460	115064	605	114813	115	8.8243	trChip_vs_input_peak_4872
scaffold_566	607633	608749	1117	608233	63	8.79213	trChip_vs_input_peak_5033
scaffold_1241	2474	3226	753	2954	45	8.76035	trChip_vs_input_peak_646
scaffold_144	67309	67625	317	67507	45	8.76035	trChip_vs_input_peak_962
scaffold_980	142981	143818	838	143603	74	8.75798	trChip_vs_input_peak_6719
scaffold_354	1191580	1192695	1116	1192244	64	8.75781	trChip_vs_input_peak_3442
scaffold_82	1112032	1112514	483	1112238	34	8.75677	trChip_vs_input_peak_6238

scaffold_331	1037171	1037840	670	1037552	98	8.74273	trChip_vs_input_peak_3233
scaffold_44	3059545	3060071	527	3059768	82	8.73513	trChip_vs_input_peak_4236
scaffold_21	1197608	1197908	301	1197694	35	8.69646	trChip_vs_input_peak_1842
scaffold_257	661765	662606	842	662167	71	8.68798	trChip_vs_input_peak_2380
scaffold_1303	402	721	320	531	30	8.68645	trChip_vs_input_peak_764
scaffold_560	256260	257222	963	256548	46	8.66518	trChip_vs_input_peak_4987
scaffold_130	817310	818045	736	817710	55	8.66138	trChip_vs_input_peak_744
scaffold_40	134459	134888	430	134642	55	8.66138	trChip_vs_input_peak_3894
scaffold_155	630135	630622	488	630394	76	8.65695	trChip_vs_input_peak_1142
scaffold_401	139588	140531	944	140049	78	8.64857	trChip_vs_input_peak_3920
scaffold_547	455227	456006	780	455796	36	8.64016	trChip_vs_input_peak_4927
scaffold_198	1195929	1196768	840	1196323	60	8.62464	trChip_vs_input_peak_1671
scaffold_705	548600	549158	559	548892	60	8.62464	trChip_vs_input_peak_5779
scaffold_281	994814	995494	681	995274	47	8.62268	trChip_vs_input_peak_2686
scaffold_15169	5169	5521	353	5399	21	8.59804	trChip_vs_input_peak_1092
scaffold_187	1812283	1812882	600	1812537	48	8.5823	trChip_vs_input_peak_1567
scaffold_165	2018495	2018827	333	2018673	44	8.56991	trChip_vs_input_peak_1290
scaffold_328	972924	973255	332	973111	44	8.56991	trChip_vs_input_peak_3207
scaffold_281	89715	90669	955	90240	70	8.56731	trChip_vs_input_peak_2676
scaffold_289	626467	627117	651	626799	70	8.56731	trChip_vs_input_peak_2773
scaffold_390	610281	610734	454	610541	70	8.56731	trChip_vs_input_peak_3801
scaffold_38	2537468	2538002	535	2537784	65	8.56324	trChip_vs_input_peak_3709
scaffold_353	897431	898019	589	897707	75	8.54452	trChip_vs_input_peak_3435
scaffold_122	2363007	2363431	425	2363239	55	8.52919	trChip_vs_input_peak_606
scaffold_350	365110	366010	901	365625	80	8.52464	trChip_vs_input_peak_3418
scaffold_739	321279	321742	464	321510	33	8.50658	trChip_vs_input_peak_5904
scaffold_372	826666	827064	399	826890	23	8.50513	trChip_vs_input_peak_3626
scaffold_193	1344892	1345592	701	1345400	39	8.49175	trChip_vs_input_peak_1633
scaffold_488	787738	790917	3180	789861	64	8.4635	trChip_vs_input_peak_4558
scaffold_31	4179531	4180558	1028	4179968	69	8.44665	trChip_vs_input_peak_3053
scaffold_440	396166	397060	895	396473	52	8.43914	trChip_vs_input_peak_4243
scaffold_887	301781	302275	495	302084	23	8.40563	trChip_vs_input_peak_6469
scaffold_343	176234	176705	472	176508	38	8.39856	trChip_vs_input_peak_3353
scaffold_1803	6714	7091	378	6884	48	8.36433	trChip_vs_input_peak_1525
scaffold_9431	2578	3299	722	3123	48	8.36433	trChip_vs_input_peak_6629
scaffold_267	192017	192601	585	192342	63	8.33329	trChip_vs_input_peak_2477
scaffold_1051	147101	147663	563	147407	68	8.32598	trChip_vs_input_peak_191
scaffold_444	698540	699029	490	698770	68	8.32598	trChip_vs_input_peak_4259
scaffold_512	390835	391413	579	391181	68	8.32598	trChip_vs_input_peak_4744
scaffold_66	1984598	1985404	807	1984829	68	8.32598	trChip_vs_input_peak_5496

scaffold_1326	84181	84492	312	84310	24	8.29956	trChip_vs_input_peak_792
scaffold_1014	110604	111224	621	110773	38	8.27945	trChip_vs_input_peak_107
scaffold_30	1568576	1569327	752	1568864	45	8.2634	trChip_vs_input_peak_2921
scaffold_1099	125200	126247	1048	126047	20	8.20722	trChip_vs_input_peak_310
scaffold_1084	158461	158981	521	158759	67	8.20531	trChip_vs_input_peak_279
scaffold_159	1219475	1220117	643	1219961	62	8.20309	trChip_vs_input_peak_1204
scaffold_1285	61889	62427	539	62111	57	8.20048	trChip_vs_input_peak_707
scaffold_38	3179677	3180004	328	3179849	54	8.19868	trChip_vs_input_peak_3721
scaffold_561	238496	238895	400	238672	47	8.19363	trChip_vs_input_peak_5008
scaffold_825	136298	136761	464	136578	47	8.19363	trChip_vs_input_peak_6267
scaffold_143	1099049	1099527	479	1099239	32	8.17564	trChip_vs_input_peak_955
scaffold_533	417440	417790	351	417649	32	8.17564	trChip_vs_input_peak_4850
scaffold_67	1551558	1551919	362	1551741	32	8.17564	trChip_vs_input_peak_5549
scaffold_173	1962754	1965072	2319	1964190	56	8.15006	trChip_vs_input_peak_1396
scaffold_55	408374	409249	876	408745	50	8.12068	trChip_vs_input_peak_4939
scaffold_996	92962	93552	591	93279	65	8.1126	trChip_vs_input_peak_6748
scaffold_1121	128645	129289	645	128984	71	8.09481	trChip_vs_input_peak_409
scaffold_427	178228	178954	727	178776	29	8.08301	trChip_vs_input_peak_4133
scaffold_633	82343	82881	539	82676	29	8.08301	trChip_vs_input_peak_5357
scaffold_134	2387904	2388299	396	2388104	37	8.06716	trChip_vs_input_peak_824
scaffold_327	761503	761904	402	761710	60	8.06382	trChip_vs_input_peak_3197
scaffold_14	3529536	3530082	547	3529837	51	8.04271	trChip_vs_input_peak_914
scaffold_100	621466	622162	697	621887	85	8.02507	trChip_vs_input_peak_72
scaffold_1179	140089	140588	500	140375	46	8.02293	trChip_vs_input_peak_502
scaffold_282	536737	537249	513	537131	46	8.02293	trChip_vs_input_peak_2704
scaffold_720	129228	129612	385	129406	46	8.02293	trChip_vs_input_peak_5840
scaffold_165	658570	659196	627	658849	63	8.00722	trChip_vs_input_peak_1284
scaffold_101	1990130	1990880	751	1990563	75	7.99843	trChip_vs_input_peak_92
scaffold_1015	74102	74861	760	74320	75	7.99843	trChip_vs_input_peak_108
scaffold_17	413872	414435	564	414031	70	7.98238	trChip_vs_input_peak_1336
scaffold_8	3536817	3537371	555	3537094	70	7.98238	trChip_vs_input_peak_6160
scaffold_74	239799	240470	672	240238	65	7.96398	trChip_vs_input_peak_5907
scaffold_817	228297	228888	592	228518	42	7.92772	trChip_vs_input_peak_6230
scaffold_137	220069	220598	530	220258	55	7.9177	trChip_vs_input_peak_861
scaffold_615	532107	532587	481	532356	74	7.89319	trChip_vs_input_peak_5285
scaffold_864	139155	139569	415	139362	74	7.89319	trChip_vs_input_peak_6403
scaffold_41	355303	355753	451	355474	50	7.88804	trChip_vs_input_peak_3972
scaffold_96	1087332	1087693	362	1087542	44	7.8817	trChip_vs_input_peak_6671
scaffold_175	2080964	2081472	509	2081246	69	7.86995	trChip_vs_input_peak_1438
scaffold_353	507973	508355	383	508167	45	7.85223	trChip_vs_input_peak_3434

scaffold_642	43041	43431	391	43263	45	7.85223	trChip_vs_input_peak_5408
scaffold_325	1145191	1146087	897	1145584	27	7.84582	trChip_vs_input_peak_3179
scaffold_850	209392	209828	437	209589	64	7.84332	trChip_vs_input_peak_6364
scaffold_1935	15083	15542	460	15353	46	7.84007	trChip_vs_input_peak_1634
scaffold_354	630980	631763	784	631373	46	7.84007	trChip_vs_input_peak_3440
scaffold_1099	286218	286559	342	286419	19	7.8164	trChip_vs_input_peak_312
scaffold_400	503694	504112	419	503895	67	7.81041	trChip_vs_input_peak_3918
scaffold_241	1317124	1317695	572	1317392	40	7.80814	trChip_vs_input_peak_2199
scaffold_719	370480	371553	1074	370842	58	7.79943	trChip_vs_input_peak_5825
scaffold_89	812582	813363	782	812929	73	7.78795	trChip_vs_input_peak_6472
scaffold_396	683335	683738	404	683566	54	7.77631	trChip_vs_input_peak_3827
scaffold_427	596210	596613	404	596410	54	7.77631	trChip_vs_input_peak_4144
scaffold_85	1748557	1749170	614	1748908	54	7.77631	trChip_vs_input_peak_6354
scaffold_352	1080911	1081779	869	1081540	87	7.77132	trChip_vs_input_peak_3430
scaffold_501	638443	638930	488	638770	50	7.76766	trChip_vs_input_peak_4676
scaffold_475	664914	666078	1165	665705	35	7.76012	trChip_vs_input_peak_4481
scaffold_366	958781	959273	493	959051	35	7.75251	trChip_vs_input_peak_3532
scaffold_989	24317	24904	588	24679	41	7.74335	trChip_vs_input_peak_6725
scaffold_306	104326	104747	422	104518	52	7.73598	trChip_vs_input_peak_2987
scaffold_135	2014267	2014802	536	2014547	49	7.73337	trChip_vs_input_peak_846
scaffold_29	2540582	2541142	561	2540784	49	7.73337	trChip_vs_input_peak_2792
scaffold_1384	7590	8219	630	7949	42	7.72448	trChip_vs_input_peak_885
scaffold_3661	7698	8160	463	7932	63	7.72265	trChip_vs_input_peak_3539
scaffold_1010	193772	194475	704	194142	77	7.71579	trChip_vs_input_peak_104
scaffold_649	278362	278968	607	278797	33	7.68355	trChip_vs_input_peak_5435
scaffold_77	2999659	3000189	531	2999892	58	7.68226	trChip_vs_input_peak_6039
scaffold_372	712250	712704	455	712482	30	7.68015	trChip_vs_input_peak_3622
scaffold_830	287880	288242	363	288044	30	7.68015	trChip_vs_input_peak_6304
scaffold_1239	13969	14338	370	14170	34	7.66242	trChip_vs_input_peak_636
scaffold_31	1393938	1394470	533	1394256	67	7.6451	trChip_vs_input_peak_3027
scaffold_34	864355	865056	702	864640	59	7.64324	trChip_vs_input_peak_3311
scaffold_1045	169415	169765	351	169585	39	7.6177	trChip_vs_input_peak_163
scaffold_1546	11817	12522	706	12256	39	7.6177	trChip_vs_input_peak_1140
scaffold_178	1996593	1996954	362	1996749	39	7.6177	trChip_vs_input_peak_1478
scaffold_228	1669229	1669738	510	1669537	39	7.6177	trChip_vs_input_peak_2076
scaffold_924	188603	188865	263	188752	24	7.61416	trChip_vs_input_peak_6586
scaffold_40	3647239	3647568	330	3647447	37	7.60627	trChip_vs_input_peak_3907
scaffold_76	1138293	1138822	530	1138619	50	7.60242	trChip_vs_input_peak_5966
scaffold_27	684284	684811	528	684579	62	7.60198	trChip_vs_input_peak_2509
scaffold_193	359279	359804	526	359494	51	7.59002	trChip_vs_input_peak_1630

scaffold_134	1877611	1878779	1169	1878441	38	7.58964	trChip_vs_input_peak_819
scaffold_1037	25262	25575	314	25427	25	7.58216	trChip_vs_input_peak_152
scaffold_59	1376309	1376711	403	1376501	24	7.58121	trChip_vs_input_peak_5153
scaffold_459	294667	295189	523	294968	48	7.57871	trChip_vs_input_peak_4344
scaffold_88	1809508	1810478	971	1809775	48	7.57871	trChip_vs_input_peak_6452
scaffold_417	886046	886499	454	886267	52	7.57813	trChip_vs_input_peak_4053
scaffold_389	1011947	1012344	398	1012096	71	7.57746	trChip_vs_input_peak_3778
scaffold_222	1033316	1034046	731	1033734	57	7.55205	trChip_vs_input_peak_2013
scaffold_68	2060813	2061409	597	2061196	57	7.55205	trChip_vs_input_peak_5619
scaffold_179	1020404	1021104	701	1020610	41	7.54484	trChip_vs_input_peak_1490
scaffold_354	200828	201131	304	201000	34	7.53717	trChip_vs_input_peak_3439
scaffold_106	1949794	1951332	1539	1950564	66	7.53267	trChip_vs_input_peak_210
scaffold_1128	769	1214	446	1000	66	7.53267	trChip_vs_input_peak_414
scaffold_43	827090	827622	533	827331	66	7.53267	trChip_vs_input_peak_4160
scaffold_661	199321	199950	630	199519	66	7.53267	trChip_vs_input_peak_5506
scaffold_106	2210586	2211065	480	2210813	42	7.53141	trChip_vs_input_peak_214
scaffold_289	874953	875290	338	875149	42	7.53141	trChip_vs_input_peak_2775
scaffold_661	206331	206774	444	206588	75	7.51795	trChip_vs_input_peak_5507
scaffold_138	956881	957369	489	957069	43	7.51083	trChip_vs_input_peak_882
scaffold_636	512134	512666	533	512388	43	7.51083	trChip_vs_input_peak_5364
scaffold_640	383919	384690	772	384229	43	7.51083	trChip_vs_input_peak_5401
scaffold_191	353928	354411	484	354266	44	7.50645	trChip_vs_input_peak_1615
scaffold_697	459715	460144	430	459945	84	7.50639	trChip_vs_input_peak_5710
scaffold_219	278933	279461	529	279273	45	7.49484	trChip_vs_input_peak_1931
scaffold_107	1591109	1591658	550	1591373	52	7.49354	trChip_vs_input_peak_228
scaffold_108	865503	867499	1997	867215	52	7.49354	trChip_vs_input_peak_255
scaffold_650	564736	565202	467	564957	52	7.49354	trChip_vs_input_peak_5468
scaffold_1231	95684	96369	686	96038	46	7.48376	trChip_vs_input_peak_631
scaffold_222	428234	428897	664	428620	62	7.48137	trChip_vs_input_peak_2008
scaffold_191	228102	228573	472	228302	61	7.48132	trChip_vs_input_peak_1614
scaffold_280	119187	120128	942	119798	61	7.48132	trChip_vs_input_peak_2666
scaffold_264	1071239	1072070	832	1071758	48	7.46305	trChip_vs_input_peak_2454
scaffold_6	6137366	6138163	798	6137854	34	7.43028	trChip_vs_input_peak_5215
scaffold_389	859127	859604	478	859333	38	7.42725	trChip_vs_input_peak_3775
scaffold_372	810441	810826	386	810640	47	7.42404	trChip_vs_input_peak_3624
scaffold_13	2929925	2930297	373	2930089	65	7.42024	trChip_vs_input_peak_735
scaffold_861	223720	224234	515	223928	74	7.41903	trChip_vs_input_peak_6395
scaffold_534	491355	491799	445	491582	54	7.41046	trChip_vs_input_peak_4853
scaffold_82	1409854	1410192	339	1410047	18	7.39355	trChip_vs_input_peak_6239
scaffold_262	386957	387953	997	387315	57	7.38847	trChip_vs_input_peak_2435

scaffold_280	151939	152274	336	152101	38	7.38455	trChip_vs_input_peak_2667
scaffold_143	1025313	1025926	614	1025503	39	7.37462	trChip_vs_input_peak_954
scaffold_1143	94436	94855	420	94648	69	7.36698	trChip_vs_input_peak_452
scaffold_170	489989	490532	544	490302	60	7.36065	trChip_vs_input_peak_1362
scaffold_217	415205	415603	399	415429	60	7.36065	trChip_vs_input_peak_1905
scaffold_471	675757	676539	783	676149	60	7.36065	trChip_vs_input_peak_4437
scaffold_273	60349	61243	895	60893	62	7.3567	trChip_vs_input_peak_2566
scaffold_427	33628	34112	485	33900	42	7.34013	trChip_vs_input_peak_4128
scaffold_357	599958	600394	437	600213	43	7.33964	trChip_vs_input_peak_3469
scaffold_1295	46731	47169	439	46921	33	7.32182	trChip_vs_input_peak_722
scaffold_1505	77439	77871	433	77685	33	7.32182	trChip_vs_input_peak_1079
scaffold_74	2868643	2869335	693	2868911	33	7.32182	trChip_vs_input_peak_5916
scaffold_488	446084	446531	448	446329	73	7.32011	trChip_vs_input_peak_4555
scaffold_104	1888886	1889523	638	1889154	64	7.30782	trChip_vs_input_peak_160
scaffold_268	1487324	1487701	378	1487508	49	7.29809	trChip_vs_input_peak_2499
scaffold_150	1532778	1533170	393	1532973	24	7.29053	trChip_vs_input_peak_1070
scaffold_18	2488803	2489409	607	2489139	24	7.29053	trChip_vs_input_peak_1505
scaffold_380	808143	808477	335	808269	24	7.29053	trChip_vs_input_peak_3733
scaffold_453	703986	704289	304	704113	24	7.29053	trChip_vs_input_peak_4330
scaffold_957	19621	19956	336	19760	24	7.29053	trChip_vs_input_peak_6657
scaffold_418	287319	287979	661	287526	51	7.28646	trChip_vs_input_peak_4057
scaffold_671	272785	273838	1054	273105	51	7.28646	trChip_vs_input_peak_5577
scaffold_560	493873	495784	1912	495562	77	7.27855	trChip_vs_input_peak_5002
scaffold_155	787790	788237	448	788057	46	7.26937	trChip_vs_input_peak_1147
scaffold_202	598113	598597	485	598314	46	7.26937	trChip_vs_input_peak_1761
scaffold_3	6587632	6588092	461	6587871	46	7.26937	trChip_vs_input_peak_2900
scaffold_377	97577	97903	327	97740	46	7.26937	trChip_vs_input_peak_3668
scaffold_910	217082	217738	657	217538	46	7.26937	trChip_vs_input_peak_6551
scaffold_417	170557	171460	904	171113	68	7.26173	trChip_vs_input_peak_4046
scaffold_593	95001	95829	829	95317	68	7.26173	trChip_vs_input_peak_5167
scaffold_30	1109777	1110468	692	1110253	59	7.23998	trChip_vs_input_peak_2911
scaffold_377	222654	223198	545	222977	59	7.23998	trChip_vs_input_peak_3674
scaffold_67	1355997	1356568	572	1356177	59	7.23998	trChip_vs_input_peak_5546
scaffold_239	105945	106408	464	106125	37	7.23681	trChip_vs_input_peak_2168
scaffold_279	1452078	1452514	437	1452295	37	7.23681	trChip_vs_input_peak_2634
scaffold_138	333257	333904	648	333512	50	7.21076	trChip_vs_input_peak_878
scaffold_333	410809	411278	470	411027	50	7.21076	trChip_vs_input_peak_3242
scaffold_6	3139742	3140236	495	3140019	50	7.21076	trChip_vs_input_peak_5199
scaffold_316	452503	452871	369	452685	63	7.19539	trChip_vs_input_peak_3098
scaffold_6367	2409	2756	348	2547	37	7.1952	trChip_vs_input_peak_5368

scaffold_11	4994054	4995489	1436	4994578	38	7.19026	trChip_vs_input_peak_341
scaffold_511	834857	835380	524	835069	38	7.19026	trChip_vs_input_peak_4739
scaffold_315	856108	856563	456	856350	39	7.18557	trChip_vs_input_peak_3096
scaffold_119	2095981	2096606	626	2096275	89	7.17804	trChip_vs_input_peak_524
scaffold_154	2209215	2209773	559	2209590	41	7.16943	trChip_vs_input_peak_1138
scaffold_605	391053	391484	432	391266	41	7.16943	trChip_vs_input_peak_5246
scaffold_752	107179	107590	412	107383	44	7.1653	trChip_vs_input_peak_5951
scaffold_404	604969	605922	954	605584	45	7.16179	trChip_vs_input_peak_3942
scaffold_577	152210	153260	1051	152922	45	7.16179	trChip_vs_input_peak_5072
scaffold_448	601342	601917	576	601500	54	7.16143	trChip_vs_input_peak_4284
scaffold_950	133731	134304	574	133952	54	7.16143	trChip_vs_input_peak_6639
scaffold_257	1015386	1016168	783	1015703	67	7.15649	trChip_vs_input_peak_2385
scaffold_371	759605	760279	675	759814	47	7.15521	trChip_vs_input_peak_3616
scaffold_135	2188364	2189082	719	2188782	80	7.15314	trChip_vs_input_peak_851
scaffold_12	2142276	2143084	809	2142853	48	7.15213	trChip_vs_input_peak_543
scaffold_171	532375	532776	402	532595	51	7.14361	trChip_vs_input_peak_1368
scaffold_54	2544889	2545284	396	2545044	54	7.13603	trChip_vs_input_peak_4882
scaffold_173	1188800	1189237	438	1189017	71	7.12227	trChip_vs_input_peak_1389
scaffold_211	722504	723039	536	722807	58	7.11932	trChip_vs_input_peak_1866
scaffold_393	316632	317147	516	316812	58	7.11932	trChip_vs_input_peak_3812
scaffold_481	858941	859515	575	859281	58	7.11932	trChip_vs_input_peak_4532
scaffold_44	1358772	1359193	422	1358981	45	7.1147	trChip_vs_input_peak_4222
scaffold_1483	32363	32874	512	32656	32	7.10647	trChip_vs_input_peak_1033
scaffold_638	410798	411143	346	410987	32	7.10647	trChip_vs_input_peak_5373
scaffold_1	5973820	5974345	526	5974146	75	7.09192	trChip_vs_input_peak_30
scaffold_619	561158	561898	741	561399	62	7.08296	trChip_vs_input_peak_5302
scaffold_151	1590996	1592252	1257	1591784	49	7.06938	trChip_vs_input_peak_1085
scaffold_17	4966335	4966777	443	4966558	49	7.06938	trChip_vs_input_peak_1356
scaffold_501	539003	539866	864	539531	49	7.06938	trChip_vs_input_peak_4675
scaffold_372	771247	771731	485	771424	66	7.05125	trChip_vs_input_peak_3623
scaffold_96	1555877	1556266	390	1556076	66	7.05125	trChip_vs_input_peak_6673
scaffold_151	1475131	1475701	571	1475324	36	7.04637	trChip_vs_input_peak_1084
scaffold_382	953945	954626	682	954394	36	7.04637	trChip_vs_input_peak_3744
scaffold_427	487600	487947	348	487756	36	7.04637	trChip_vs_input_peak_4141
scaffold_618	538341	538819	479	538578	36	7.04637	trChip_vs_input_peak_5298
scaffold_692	446196	446576	381	446368	36	7.04637	trChip_vs_input_peak_5700
scaffold_29	2021035	2021799	765	2021354	83	7.0405	trChip_vs_input_peak_2789
scaffold_15169	4459	4867	409	4648	17	7.03476	trChip_vs_input_peak_1091
scaffold_368	607548	607796	249	607668	17	7.03476	trChip_vs_input_peak_3555
scaffold_1060	174211	174668	458	174499	53	7.03122	trChip_vs_input_peak_217

scaffold_396	691761	692341	581	692012	70	7.02335	trChip_vs_input_peak_3828
scaffold_367	904899	905563	665	905122	104	7.01527	trChip_vs_input_peak_3550
scaffold_226	923124	924166	1043	923704	61	7.00641	trChip_vs_input_peak_2052
scaffold_266	530064	531164	1101	530651	56	7.00634	trChip_vs_input_peak_2474
scaffold_219	323177	323602	426	323349	50	7.00623	trChip_vs_input_peak_1933
scaffold_165	562047	562700	654	562258	49	7.00621	trChip_vs_input_peak_1282
scaffold_243	1621377	1621825	449	1621640	45	7.00612	trChip_vs_input_peak_2221
scaffold_88	1123918	1124398	481	1124187	42	7.00605	trChip_vs_input_peak_6448
scaffold_217	396727	397198	472	397031	39	7.00596	trChip_vs_input_peak_1904
scaffold_645	83692	84076	385	83867	34	7.00578	trChip_vs_input_peak_5410
scaffold_427	12483	13034	552	12872	31	7.00564	trChip_vs_input_peak_4126
scaffold_520	796074	796925	852	796692	30	7.00559	trChip_vs_input_peak_4798
scaffold_8	1197738	1198449	712	1197960	29	7.00554	trChip_vs_input_peak_6154
scaffold_1070	106864	107153	290	106973	27	7.00542	trChip_vs_input_peak_235
scaffold_3246	11110	12192	1083	11968	27	7.00542	trChip_vs_input_peak_3165
scaffold_255	508539	509076	538	508916	24	7.0052	trChip_vs_input_peak_2356
scaffold_235	97478	97852	375	97685	23	6.99891	trChip_vs_input_peak_2144
scaffold_3048	1242	1625	384	1425	40	6.99873	trChip_vs_input_peak_2983
scaffold_341	728771	729363	593	729173	40	6.99873	trChip_vs_input_peak_3346
scaffold_460	441701	442127	427	441930	40	6.99873	trChip_vs_input_peak_4362
scaffold_108	930122	930622	501	930308	57	6.99865	trChip_vs_input_peak_256
scaffold_55	2809671	2810284	614	2809958	57	6.99865	trChip_vs_input_peak_4951
scaffold_887	127954	128387	434	128171	57	6.99865	trChip_vs_input_peak_6467
scaffold_18	2488317	2488608	292	2488423	21	6.97324	trChip_vs_input_peak_1504
scaffold_33	2904075	2905565	1491	2904504	61	6.97053	trChip_vs_input_peak_3218
scaffold_46	315253	315818	566	315536	61	6.97053	trChip_vs_input_peak_4352
scaffold_503	481619	482724	1106	482199	44	6.96004	trChip_vs_input_peak_4689
scaffold_1340	35430	35921	492	35713	48	6.92799	trChip_vs_input_peak_825
scaffold_14	1766805	1767215	411	1767020	48	6.92799	trChip_vs_input_peak_903
scaffold_827	325961	326754	794	326360	48	6.92799	trChip_vs_input_peak_6277
scaffold_951	85730	86272	543	86079	48	6.92799	trChip_vs_input_peak_6644
scaffold_363	656514	657101	588	656805	52	6.90101	trChip_vs_input_peak_3513
scaffold_84	1915798	1916281	484	1915971	52	6.90101	trChip_vs_input_peak_6328
scaffold_330	745033	745447	415	745230	31	6.89112	trChip_vs_input_peak_3230
scaffold_372	926480	926819	340	926633	31	6.89112	trChip_vs_input_peak_3627
scaffold_389	822908	823508	601	823205	77	6.88821	trChip_vs_input_peak_3774
scaffold_30	1671893	1672645	753	1672162	56	6.87798	trChip_vs_input_peak_2925
scaffold_376	1096344	1097113	770	1096746	49	6.86885	trChip_vs_input_peak_3663
scaffold_51	3110243	3111254	1012	3110650	45	6.85708	trChip_vs_input_peak_4731
scaffold_13	2498683	2499169	487	2498959	35	6.85593	trChip_vs_input_peak_733

scaffold_495	127450	128353	904	127904	35	6.85593	trChip_vs_input_peak_4620
scaffold_2	3861002	3861767	766	3861472	42	6.84685	trChip_vs_input_peak_1704
scaffold_289	1182817	1183310	494	1183043	42	6.84685	trChip_vs_input_peak_2778
scaffold_31	1921164	1922061	898	1921724	42	6.84685	trChip_vs_input_peak_3029
scaffold_94	741276	742080	805	741852	40	6.83921	trChip_vs_input_peak_6618
scaffold_622	306452	306910	459	306666	39	6.83511	trChip_vs_input_peak_5315
scaffold_1237	55123	55559	437	55326	39	6.82803	trChip_vs_input_peak_635
scaffold_205	1478760	1479078	319	1478888	39	6.82803	trChip_vs_input_peak_1789
scaffold_243	1230282	1231126	845	1230959	39	6.82803	trChip_vs_input_peak_2218
scaffold_582	391360	391715	356	391579	39	6.82803	trChip_vs_input_peak_5116
scaffold_164	1015906	1016810	905	1016109	33	6.82511	trChip_vs_input_peak_1277
scaffold_311	227670	228242	573	227943	34	6.81121	trChip_vs_input_peak_3060
scaffold_27	2942178	2942603	426	2942412	33	6.80561	trChip_vs_input_peak_2540
scaffold_217	633873	634208	336	634002	43	6.80537	trChip_vs_input_peak_1908
scaffold_2575	2119	2416	298	2233	43	6.80537	trChip_vs_input_peak_2387
scaffold_39	188541	189595	1055	188884	43	6.80537	trChip_vs_input_peak_3781
scaffold_47	2654531	2654908	378	2654698	31	6.7934	trChip_vs_input_peak_4420
scaffold_20	1596512	1597079	568	1596736	47	6.7866	trChip_vs_input_peak_1732
scaffold_311	313642	314245	604	313844	47	6.7866	trChip_vs_input_peak_3061
scaffold_5	2345456	2345998	543	2345738	47	6.7866	trChip_vs_input_peak_4647
scaffold_82	2735105	2735423	319	2735250	47	6.7866	trChip_vs_input_peak_6251
scaffold_131	2225428	2226112	685	2225888	59	6.7804	trChip_vs_input_peak_771
scaffold_137	2396860	2397489	630	2397272	51	6.7708	trChip_vs_input_peak_875
scaffold_353	951337	951821	485	951538	51	6.7708	trChip_vs_input_peak_3436
scaffold_41	2467399	2467953	555	2467727	51	6.7708	trChip_vs_input_peak_3982
scaffold_401	910071	910488	418	910258	56	6.76886	trChip_vs_input_peak_3927
scaffold_355	1103755	1104304	550	1104073	54	6.7605	trChip_vs_input_peak_3453
scaffold_3	6630446	6631089	644	6630815	55	6.75732	trChip_vs_input_peak_2903
scaffold_30	2801668	2802222	555	2801923	55	6.75732	trChip_vs_input_peak_2947
scaffold_614	477683	478203	521	477901	55	6.75732	trChip_vs_input_peak_5279
scaffold_119	724397	724747	351	724557	26	6.75522	trChip_vs_input_peak_517
scaffold_475	748047	749348	1302	748542	39	6.75278	trChip_vs_input_peak_4485
scaffold_167	1141401	1141974	574	1141769	59	6.74568	trChip_vs_input_peak_1312
scaffold_956	197941	198613	673	198216	59	6.74568	trChip_vs_input_peak_6655
scaffold_1	6161728	6162279	552	6161977	63	6.73552	trChip_vs_input_peak_32
scaffold_1159	94500	94885	386	94702	63	6.73552	trChip_vs_input_peak_470
scaffold_281	52078	52538	461	52306	63	6.73552	trChip_vs_input_peak_2675
scaffold_20076	1095	1372	278	1256	18	6.73322	trChip_vs_input_peak_1747
scaffold_489	264307	264977	671	264515	67	6.72659	trChip_vs_input_peak_4561
scaffold_441	511420	511817	398	511636	47	6.72596	trChip_vs_input_peak_4250

scaffold_289	387687	389309	1623	388245	45	6.71425	trChip_vs_input_peak_2765
scaffold_274	1123869	1124340	472	1124091	44	6.70801	trChip_vs_input_peak_2581
scaffold_410	868811	869435	625	869190	43	6.70151	trChip_vs_input_peak_3998
scaffold_137	1243465	1243982	518	1243651	26	6.68916	trChip_vs_input_peak_865
scaffold_205	19988	20337	350	20170	26	6.68916	trChip_vs_input_peak_1785
scaffold_82	2626458	2626808	351	2626544	20	6.68652	trChip_vs_input_peak_6248
scaffold_89	2613627	2614331	705	2613962	61	6.68307	trChip_vs_input_peak_6476
scaffold_137	2374352	2375385	1034	2374932	30	6.67577	trChip_vs_input_peak_872
scaffold_11474	1039	1476	438	1210	34	6.66548	trChip_vs_input_peak_458
scaffold_22	2038684	2039325	642	2038906	34	6.66548	trChip_vs_input_peak_1956
scaffold_826	189768	190232	465	189958	34	6.66548	trChip_vs_input_peak_6269
scaffold_250	378502	378889	388	378675	38	6.66423	trChip_vs_input_peak_2309
scaffold_113	423108	423480	373	423278	38	6.65733	trChip_vs_input_peak_420
scaffold_27	1907347	1907918	572	1907544	38	6.65733	trChip_vs_input_peak_2526
scaffold_675	539441	541121	1681	540691	38	6.65733	trChip_vs_input_peak_5593
scaffold_709	476538	477138	601	476847	38	6.65733	trChip_vs_input_peak_5795
scaffold_92	389061	389736	676	389451	38	6.65733	trChip_vs_input_peak_6567
scaffold_218	274172	274750	579	274428	42	6.6507	trChip_vs_input_peak_1914
scaffold_303	1366002	1367114	1113	1366227	42	6.6507	trChip_vs_input_peak_2977
scaffold_654	459220	459663	444	459434	42	6.6507	trChip_vs_input_peak_5474
scaffold_661	332829	333643	815	333224	42	6.6507	trChip_vs_input_peak_5513
scaffold_775	319547	319792	246	319646	16	6.64394	trChip_vs_input_peak_6062
scaffold_789	384524	384874	351	384665	16	6.64394	trChip_vs_input_peak_6115
scaffold_950	39192	39441	250	39351	16	6.64394	trChip_vs_input_peak_6637
scaffold_2325	1448	2017	570	1792	50	6.64059	trChip_vs_input_peak_2135
scaffold_320	1318005	1318842	838	1318614	50	6.64059	trChip_vs_input_peak_3138
scaffold_630	318938	319562	625	319372	50	6.64059	trChip_vs_input_peak_5355
scaffold_982	51621	52193	573	51986	50	6.64059	trChip_vs_input_peak_6722
scaffold_676	47414	47918	505	47688	54	6.63665	trChip_vs_input_peak_5594
scaffold_8464	19954	20264	311	20089	17	6.6359	trChip_vs_input_peak_6339
scaffold_54	2604731	2605215	485	2604940	52	6.63098	trChip_vs_input_peak_4884
scaffold_1384	33638	34113	476	33886	62	6.63028	trChip_vs_input_peak_887
scaffold_52	1259423	1260000	578	1259687	62	6.63028	trChip_vs_input_peak_4787
scaffold_466	747086	747725	640	747448	51	6.62414	trChip_vs_input_peak_4390
scaffold_1768	55061	55570	510	55485	22	6.60322	trChip_vs_input_peak_1452
scaffold_474	417647	418310	664	417804	48	6.60204	trChip_vs_input_peak_4453
scaffold_7	2694179	2694662	484	2694436	48	6.60204	trChip_vs_input_peak_5730
scaffold_72	295583	297605	2023	296030	48	6.60204	trChip_vs_input_peak_5827
scaffold_1120	129040	129618	579	129215	44	6.56828	trChip_vs_input_peak_408
scaffold_248	27163	27637	475	27351	44	6.56828	trChip_vs_input_peak_2270

scaffold_235	132525	133088	564	132696	43	6.55895	trChip_vs_input_peak_2145
scaffold_122	2124837	2125163	327	2125038	28	6.55362	trChip_vs_input_peak_603
scaffold_229	488059	489395	1337	488901	42	6.5492	trChip_vs_input_peak_2078
scaffold_367	428905	429591	687	429106	73	6.53497	trChip_vs_input_peak_3540
scaffold_555	87973	88466	494	88242	73	6.53497	trChip_vs_input_peak_4964
scaffold_737	70930	71693	764	71285	73	6.53497	trChip_vs_input_peak_5896
scaffold_789	304756	305390	635	305056	73	6.53497	trChip_vs_input_peak_6114
scaffold_16	1027586	1027961	376	1027752	69	6.53203	trChip_vs_input_peak_1215
scaffold_637	280254	280863	610	280674	54	6.53136	trChip_vs_input_peak_5369
scaffold_18293	833	1389	557	1238	40	6.52839	trChip_vs_input_peak_1535
scaffold_189	1869283	1872102	2820	1870302	40	6.52839	trChip_vs_input_peak_1591
scaffold_296	1169545	1170194	650	1169788	40	6.52839	trChip_vs_input_peak_2845
scaffold_329	720784	721146	363	720963	26	6.52234	trChip_vs_input_peak_3208
scaffold_39	3789009	3789498	490	3789238	57	6.52082	trChip_vs_input_peak_3796
scaffold_64	2999385	2999770	386	2999571	57	6.52082	trChip_vs_input_peak_5394
scaffold_135	1508993	1509604	612	1509191	39	6.51725	trChip_vs_input_peak_841
scaffold_191	522888	523479	592	523248	39	6.51725	trChip_vs_input_peak_1617
scaffold_154	2110009	2110446	438	2110249	53	6.51599	trChip_vs_input_peak_1136
scaffold_167	1338856	1339298	443	1339068	53	6.51599	trChip_vs_input_peak_1314
scaffold_21	2224997	2225747	751	2225465	53	6.51599	trChip_vs_input_peak_1845
scaffold_601	166671	167030	360	166845	53	6.51599	trChip_vs_input_peak_5235
scaffold_389	515274	515649	376	515454	38	6.50559	trChip_vs_input_peak_3769
scaffold_214	1537699	1538208	510	1537875	25	6.50503	trChip_vs_input_peak_1891
scaffold_692	241450	241873	424	241625	25	6.50503	trChip_vs_input_peak_5698
scaffold_1	4925340	4926071	732	4925739	45	6.50383	trChip_vs_input_peak_23
scaffold_311	998794	999709	916	999164	45	6.50383	trChip_vs_input_peak_3069
scaffold_357	920138	920567	430	920351	45	6.50383	trChip_vs_input_peak_3470
scaffold_676	273530	274076	547	273885	45	6.50383	trChip_vs_input_peak_5598
scaffold_967	208246	209000	755	208474	45	6.50383	trChip_vs_input_peak_6685
scaffold_12	5443813	5444215	403	5443993	41	6.49603	trChip_vs_input_peak_564
scaffold_244	1188361	1188850	490	1188531	41	6.49603	trChip_vs_input_peak_2229
scaffold_28	614917	615221	305	615095	41	6.49603	trChip_vs_input_peak_2643
scaffold_393	638729	639442	714	639254	41	6.49603	trChip_vs_input_peak_3814
scaffold_706	447039	447734	696	447273	41	6.49603	trChip_vs_input_peak_5783
scaffold_737	110077	110580	504	110308	41	6.49603	trChip_vs_input_peak_5898
scaffold_11	820225	821245	1021	821013	49	6.4873	trChip_vs_input_peak_320
scaffold_373	1110196	1110621	426	1110403	49	6.4873	trChip_vs_input_peak_3637
scaffold_676	70467	71033	567	70835	37	6.48663	trChip_vs_input_peak_5595
scaffold_70	2581974	2582332	359	2582166	35	6.46701	trChip_vs_input_peak_5762
scaffold_27	2836245	2836869	625	2836659	29	6.46043	trChip_vs_input_peak_2537

scaffold_377	156285	156768	484	156596	29	6.46043	trChip_vs_input_peak_3672
scaffold_306	1104498	1104975	478	1104793	80	6.46024	trChip_vs_input_peak_2992
scaffold_36	3290173	3291238	1066	3290743	46	6.45672	trChip_vs_input_peak_3493
scaffold_239	229590	229864	275	229792	34	6.4528	trChip_vs_input_peak_2169
scaffold_130	2089391	2091712	2322	2091010	45	6.44572	trChip_vs_input_peak_760
scaffold_739	267422	267771	350	267646	22	6.44478	trChip_vs_input_peak_5903
scaffold_448	1011227	1011624	398	1011427	25	6.44142	trChip_vs_input_peak_4290
scaffold_303	246784	247380	597	247182	68	6.43872	trChip_vs_input_peak_2966
scaffold_4644	7125	7537	413	7348	68	6.43872	trChip_vs_input_peak_4384
scaffold_762	10536	10923	388	10748	64	6.42983	trChip_vs_input_peak_6013
scaffold_33	3471752	3472569	818	3471963	21	6.42136	trChip_vs_input_peak_3223
scaffold_262	1346729	1347385	657	1347000	60	6.41979	trChip_vs_input_peak_2441
scaffold_403	878069	878682	614	878220	60	6.41979	trChip_vs_input_peak_3937
scaffold_1117	22246	22507	262	22296	21	6.41567	trChip_vs_input_peak_396
scaffold_243	1005081	1006398	1318	1006172	42	6.40988	trChip_vs_input_peak_2213
scaffold_42	1595443	1596264	822	1595654	56	6.40839	trChip_vs_input_peak_4078
scaffold_135	1483604	1484050	447	1483823	52	6.39532	trChip_vs_input_peak_840
scaffold_324	29457	29940	484	29686	52	6.39532	trChip_vs_input_peak_3163
scaffold_45	2411161	2412806	1646	2412360	83	6.39001	trChip_vs_input_peak_4309
scaffold_122	811478	813945	2468	812028	48	6.38018	trChip_vs_input_peak_597
scaffold_182	521150	521725	576	521383	48	6.38018	trChip_vs_input_peak_1531
scaffold_202	1253105	1253564	460	1253389	48	6.38018	trChip_vs_input_peak_1771
scaffold_31	4000148	4000465	318	4000296	48	6.38018	trChip_vs_input_peak_3051
scaffold_338	1168824	1169323	500	1169113	48	6.38018	trChip_vs_input_peak_3290
scaffold_439	390759	391224	466	391000	48	6.38018	trChip_vs_input_peak_4205
scaffold_638	321968	322335	368	322145	17	6.37884	trChip_vs_input_peak_5371
scaffold_251	1179795	1180462	668	1180162	39	6.36916	trChip_vs_input_peak_2333
scaffold_492	243779	244303	525	244071	39	6.36916	trChip_vs_input_peak_4602
scaffold_191	937188	937744	557	937428	29	6.36881	trChip_vs_input_peak_1620
scaffold_10	4920795	4921198	404	4920988	44	6.36244	trChip_vs_input_peak_66
scaffold_135	542521	543098	578	542905	44	6.36244	trChip_vs_input_peak_833
scaffold_293	1053242	1053677	436	1053473	44	6.36244	trChip_vs_input_peak_2819
scaffold_597	5560	5947	388	5771	44	6.36244	trChip_vs_input_peak_5178
scaffold_657	291958	292510	553	292165	44	6.36244	trChip_vs_input_peak_5485
scaffold_690	138128	138467	340	138295	44	6.36244	trChip_vs_input_peak_5682
scaffold_648	135650	136342	693	135992	71	6.35835	trChip_vs_input_peak_5424
scaffold_105	2652872	2653235	364	2653070	40	6.34137	trChip_vs_input_peak_185
scaffold_423	1037531	1037917	387	1037746	40	6.34137	trChip_vs_input_peak_4108
scaffold_563	53737	54438	702	54224	40	6.34137	trChip_vs_input_peak_5020
scaffold_645	380085	380450	366	380240	40	6.34137	trChip_vs_input_peak_5413

scaffold_252	157190	157543	354	157416	37	6.33878	trChip_vs_input_peak_2341
scaffold_1226	49847	50156	310	49925	18	6.33769	trChip_vs_input_peak_615
scaffold_708	213229	213659	431	213397	18	6.33769	trChip_vs_input_peak_5785
scaffold_416	342705	343925	1221	343043	63	6.3309	trChip_vs_input_peak_4038
scaffold_3327	3638	4024	387	3815	36	6.31593	trChip_vs_input_peak_3239
scaffold_587	594527	594925	399	594692	36	6.31593	trChip_vs_input_peak_5141
scaffold_748	406833	407364	532	407030	36	6.31593	trChip_vs_input_peak_5935
scaffold_1214	92704	93175	472	92936	59	6.31455	trChip_vs_input_peak_586
scaffold_505	453324	453864	541	453608	59	6.31455	trChip_vs_input_peak_4703
scaffold_2	959093	961099	2007	960868	53	6.30574	trChip_vs_input_peak_1693
scaffold_73	642464	642916	453	642694	53	6.30574	trChip_vs_input_peak_5869
scaffold_1850	20738	21170	433	20936	26	6.30498	trChip_vs_input_peak_1554
scaffold_549	471029	471469	441	471190	26	6.30498	trChip_vs_input_peak_4931
scaffold_900	309402	309730	329	309573	26	6.30498	trChip_vs_input_peak_6518
scaffold_426	765401	765862	462	765561	17	6.30422	trChip_vs_input_peak_4118
scaffold_107	486252	486866	615	486675	55	6.29596	trChip_vs_input_peak_225
scaffold_126	1945967	1946604	638	1946339	55	6.29596	trChip_vs_input_peak_674
scaffold_146	501162	501699	538	501503	55	6.29596	trChip_vs_input_peak_997
scaffold_269	1367891	1368331	441	1368113	55	6.29596	trChip_vs_input_peak_2504
scaffold_246	28312	28799	488	28589	43	6.29127	trChip_vs_input_peak_2243
scaffold_345	103195	103976	782	103381	34	6.28737	trChip_vs_input_peak_3364
scaffold_781	68408	69049	642	68900	34	6.28737	trChip_vs_input_peak_6080
scaffold_1217	20778	21134	357	20940	32	6.2846	trChip_vs_input_peak_587
scaffold_144	1617771	1618181	411	1617984	32	6.2846	trChip_vs_input_peak_970
scaffold_862	223311	223726	416	223509	32	6.2846	trChip_vs_input_peak_6397
scaffold_130	1940410	1941093	684	1940701	42	6.27636	trChip_vs_input_peak_756
scaffold_2	6950117	6950530	414	6950332	51	6.27465	trChip_vs_input_peak_1721
scaffold_31	3751333	3751819	487	3751586	51	6.27465	trChip_vs_input_peak_3049
scaffold_244	931198	931566	369	931403	41	6.26081	trChip_vs_input_peak_2226
scaffold_281	1372243	1372663	421	1372454	41	6.26081	trChip_vs_input_peak_2699
scaffold_579	224202	224679	478	224533	41	6.26081	trChip_vs_input_peak_5075
scaffold_118	920945	921288	344	921074	24	6.25484	trChip_vs_input_peak_506
scaffold_1076	139680	139960	281	139734	15	6.25312	trChip_vs_input_peak_242
scaffold_1399	59629	59864	236	59814	15	6.25312	trChip_vs_input_peak_900
scaffold_12	5395169	5395801	633	5395442	47	6.24997	trChip_vs_input_peak_563
scaffold_207	465811	466161	351	465935	47	6.24997	trChip_vs_input_peak_1812
scaffold_27	2880414	2880797	384	2880629	47	6.24997	trChip_vs_input_peak_2538
scaffold_320	1167210	1167526	317	1167360	47	6.24997	trChip_vs_input_peak_3136
scaffold_57	122820	123461	642	123101	47	6.24997	trChip_vs_input_peak_5046
scaffold_1668	59252	59711	460	59479	32	6.24847	trChip_vs_input_peak_1306

scaffold_2525	3524	3922	399	3747	28	6.24508	trChip_vs_input_peak_2349
scaffold_375	463727	464369	643	464018	62	6.23198	trChip_vs_input_peak_3649
scaffold_13	2579717	2580483	767	2579898	39	6.22764	trChip_vs_input_peak_734
scaffold_132	555259	555679	421	555477	39	6.22764	trChip_vs_input_peak_784
scaffold_735	157489	157753	265	157645	23	6.22698	trChip_vs_input_peak_5891
scaffold_145	1847709	1848048	340	1847837	43	6.22105	trChip_vs_input_peak_990
scaffold_217	418095	418526	432	418214	43	6.22105	trChip_vs_input_peak_1906
scaffold_228	1681386	1681922	537	1681548	43	6.22105	trChip_vs_input_peak_2077
scaffold_77	2204494	2205140	647	2204913	43	6.22105	trChip_vs_input_peak_6033
scaffold_34	1975723	1976293	571	1975939	58	6.20931	trChip_vs_input_peak_3320
scaffold_396	1003552	1004229	678	1003710	58	6.20931	trChip_vs_input_peak_3836
scaffold_744	147142	147729	588	147534	22	6.19698	trChip_vs_input_peak_5926
scaffold_103	208757	209206	450	208988	37	6.19139	trChip_vs_input_peak_133
scaffold_2	5679220	5679846	627	5679436	37	6.19139	trChip_vs_input_peak_1715
scaffold_768	155220	155632	413	155429	52	6.18897	trChip_vs_input_peak_6017
scaffold_11	1135805	1136334	530	1136016	39	6.1867	trChip_vs_input_peak_322
scaffold_1117	19596	21686	2091	21508	39	6.1867	trChip_vs_input_peak_395
scaffold_22	2810066	2810815	750	2810255	39	6.1867	trChip_vs_input_peak_1967
scaffold_238	868638	869065	428	868831	39	6.1867	trChip_vs_input_peak_2166
scaffold_280	812192	812564	373	812377	39	6.1867	trChip_vs_input_peak_2671
scaffold_29	507924	508389	466	508139	39	6.1867	trChip_vs_input_peak_2784
scaffold_416	474753	475061	309	474884	39	6.1867	trChip_vs_input_peak_4041
scaffold_479	907999	908436	438	908210	39	6.1867	trChip_vs_input_peak_4505
scaffold_587	199118	199565	448	199336	39	6.1867	trChip_vs_input_peak_5137
scaffold_106	2036869	2037495	627	2037292	54	6.18354	trChip_vs_input_peak_212
scaffold_769	87639	88377	739	88037	69	6.18173	trChip_vs_input_peak_6020
scaffold_423	49193	49690	498	49365	29	6.18153	trChip_vs_input_peak_4101
scaffold_501	68738	69247	510	69096	51	6.1751	trChip_vs_input_peak_4673
scaffold_528	824648	824992	345	824872	22	6.17324	trChip_vs_input_peak_4815
scaffold_785	232397	232810	414	232622	36	6.17197	trChip_vs_input_peak_6101
scaffold_488	574871	577371	2501	576850	58	6.16988	trChip_vs_input_peak_4556
scaffold_275	415275	416698	1424	416228	65	6.15878	trChip_vs_input_peak_2586
scaffold_1030	155272	155811	540	155489	28	6.15652	trChip_vs_input_peak_148
scaffold_34	1061599	1062043	445	1061824	28	6.15652	trChip_vs_input_peak_3314
scaffold_129	1624767	1625144	378	1624947	50	6.15399	trChip_vs_input_peak_719
scaffold_599	291707	292158	452	291988	50	6.15399	trChip_vs_input_peak_5186
scaffold_95	1139918	1140209	292	1140087	50	6.15399	trChip_vs_input_peak_6633
scaffold_257	1038076	1038518	443	1038232	35	6.1516	trChip_vs_input_peak_2386
scaffold_562	522294	522669	376	522456	35	6.1516	trChip_vs_input_peak_5013
scaffold_32	1894845	1895121	277	1894975	17	6.15052	trChip_vs_input_peak_3128

scaffold_12	661031	661512	482	661259	42	6.14829	trChip_vs_input_peak_532
scaffold_422	1051944	1052315	372	1052126	42	6.14829	trChip_vs_input_peak_4100
scaffold_262	127763	128204	442	128003	49	6.14591	trChip_vs_input_peak_2431
scaffold_73	1069587	1070241	655	1069741	49	6.14591	trChip_vs_input_peak_5878
scaffold_225	813503	814364	862	813722	35	6.14522	trChip_vs_input_peak_2040
scaffold_782	384185	384705	521	384504	48	6.13053	trChip_vs_input_peak_6092
scaffold_923	206901	208076	1176	207690	48	6.13053	trChip_vs_input_peak_6582
scaffold_133	691844	692512	669	692222	29	6.12748	trChip_vs_input_peak_796
scaffold_1592	12959	13244	286	13095	20	6.12405	trChip_vs_input_peak_1212
scaffold_1783	6232	6541	310	6421	20	6.12405	trChip_vs_input_peak_1480
scaffold_494	690093	690432	340	690254	20	6.12405	trChip_vs_input_peak_4614
scaffold_757	303636	303916	281	303829	20	6.12405	trChip_vs_input_peak_5960
scaffold_220	1461083	1461863	781	1461639	46	6.11976	trChip_vs_input_peak_1992
scaffold_34	2498156	2498814	659	2498610	46	6.11976	trChip_vs_input_peak_3323
scaffold_37	178361	178713	353	178549	46	6.11976	trChip_vs_input_peak_3569
scaffold_413	974537	974909	373	974719	46	6.11976	trChip_vs_input_peak_4018
scaffold_817	84057	84538	482	84241	46	6.11976	trChip_vs_input_peak_6229
scaffold_89	738238	738610	373	738427	46	6.11976	trChip_vs_input_peak_6471
scaffold_335	663	1072	410	861	40	6.11175	trChip_vs_input_peak_3259
scaffold_110	2008403	2008765	363	2008587	33	6.10773	trChip_vs_input_peak_363
scaffold_173	1004996	1005694	699	1005447	33	6.10773	trChip_vs_input_peak_1388
scaffold_48	1417150	1417542	393	1417365	57	6.10407	trChip_vs_input_peak_4511
scaffold_927	193120	193529	410	193296	57	6.10407	trChip_vs_input_peak_6592
scaffold_1144	180162	180491	330	180334	31	6.09416	trChip_vs_input_peak_457
scaffold_143	426110	426574	465	426362	31	6.09416	trChip_vs_input_peak_949
scaffold_189	1873744	1875438	1695	1873903	31	6.09416	trChip_vs_input_peak_1593
scaffold_306	1063594	1064134	541	1063923	31	6.09416	trChip_vs_input_peak_2990
scaffold_82	570547	570968	422	570714	31	6.09416	trChip_vs_input_peak_6237
scaffold_60	1613105	1613604	500	1613379	68	6.09342	trChip_vs_input_peak_5225
scaffold_1082	198664	199138	475	198854	39	6.09228	trChip_vs_input_peak_276
scaffold_127	361479	361930	452	361640	19	6.09133	trChip_vs_input_peak_685
scaffold_223	458254	458508	255	458342	32	6.08406	trChip_vs_input_peak_2022
scaffold_271	543753	544240	488	543949	32	6.08406	trChip_vs_input_peak_2554
scaffold_373	403104	404125	1022	403358	32	6.08406	trChip_vs_input_peak_3634
scaffold_971	159440	160553	1114	159803	32	6.08406	trChip_vs_input_peak_6705
scaffold_1130	137943	138383	441	138120	42	6.07966	trChip_vs_input_peak_436
scaffold_28	1040729	1040994	266	1040798	18	6.07732	trChip_vs_input_peak_2646
scaffold_154	256285	256813	529	256452	53	6.07111	trChip_vs_input_peak_1115
scaffold_950	300431	300862	432	300606	53	6.07111	trChip_vs_input_peak_6642
scaffold_587	348611	349240	630	348818	44	6.0631	trChip_vs_input_peak_5139

scaffold_87	2426339	2426772	434	2426548	75	6.06146	trChip_vs_input_peak_6419
scaffold_157	365296	365910	615	365651	31	6.05912	trChip_vs_input_peak_1177
scaffold_690	392663	393031	369	392855	31	6.05912	trChip_vs_input_peak_5688
scaffold_188	1879023	1879505	483	1879214	37	6.0507	trChip_vs_input_peak_1577
scaffold_57	1550611	1551169	559	1550784	37	6.0507	trChip_vs_input_peak_5048
scaffold_67	1706585	1707673	1089	1706961	37	6.0507	trChip_vs_input_peak_5554
scaffold_108	1209236	1209505	270	1209379	18	6.04971	trChip_vs_input_peak_259
scaffold_205	1829822	1830201	380	1830023	24	6.03921	trChip_vs_input_peak_1795
scaffold_560	252127	253111	985	252461	24	6.03921	trChip_vs_input_peak_4985
scaffold_113	1838415	1838873	459	1838644	49	6.03332	trChip_vs_input_peak_433
scaffold_279	983975	984396	422	984183	49	6.03332	trChip_vs_input_peak_2628
scaffold_149	2235780	2236453	674	2236122	38	6.03203	trChip_vs_input_peak_1048
scaffold_19907	1226	2011	786	1678	38	6.03203	trChip_vs_input_peak_1686
scaffold_246	1549394	1549952	559	1549732	38	6.03203	trChip_vs_input_peak_2258
scaffold_427	464365	464954	590	464794	38	6.03203	trChip_vs_input_peak_4140
scaffold_482	629452	629832	381	629637	38	6.03203	trChip_vs_input_peak_4534
scaffold_68	1071381	1071658	278	1071539	38	6.03203	trChip_vs_input_peak_5612
scaffold_821	299475	299770	296	299592	38	6.03203	trChip_vs_input_peak_6256
scaffold_1144	136426	136683	258	136575	27	6.02973	trChip_vs_input_peak_455
scaffold_374	764296	764697	402	764473	27	6.02973	trChip_vs_input_peak_3643
scaffold_887	196394	196695	302	196560	27	6.02973	trChip_vs_input_peak_6468
scaffold_49	2297962	2298363	402	2298166	42	6.02534	trChip_vs_input_peak_4581
scaffold_891	147899	148354	456	148012	16	6.02446	trChip_vs_input_peak_6479
scaffold_65	338319	339400	1082	338785	47	6.00542	trChip_vs_input_peak_5447
scaffold_1	6468935	6469294	360	6469083	41	6.00531	trChip_vs_input_peak_38
scaffold_575	509729	510078	350	509910	29	6.00495	trChip_vs_input_peak_5066
scaffold_134	1405388	1405731	344	1405531	23	6.00464	trChip_vs_input_peak_815
scaffold_1662	10279	10688	410	10500	23	6.00464	trChip_vs_input_peak_1303
scaffold_105	534811	535065	255	535015	17	6.00413	trChip_vs_input_peak_166
scaffold_154	462394	462755	362	462596	56	5.99882	trChip_vs_input_peak_1121
scaffold_168	348962	349513	552	349133	56	5.99882	trChip_vs_input_peak_1319
scaffold_3	6617612	6618697	1086	6618495	56	5.99882	trChip_vs_input_peak_2902
scaffold_815	299183	299820	638	299386	56	5.99882	trChip_vs_input_peak_6224
scaffold_589	483201	484381	1181	483842	45	5.98956	trChip_vs_input_peak_5146
scaffold_88	2185284	2186166	883	2185627	45	5.98956	trChip_vs_input_peak_6454
scaffold_76	2623858	2625856	1999	2625167	32	5.98951	trChip_vs_input_peak_5986
scaffold_105	56305	56777	473	56440	28	5.97548	trChip_vs_input_peak_164
scaffold_1035	24774	25304	531	25090	34	5.97452	trChip_vs_input_peak_151
scaffold_18	3671339	3671854	516	3671494	34	5.97452	trChip_vs_input_peak_1508
scaffold_738	398798	399307	510	398988	34	5.97452	trChip_vs_input_peak_5900

scaffold_218	124543	125118	576	124820	63	5.97215	trChip_vs_input_peak_1913
scaffold_1284	118468	119031	564	118683	45	5.96832	trChip_vs_input_peak_705
scaffold_8	5428615	5429286	672	5429070	45	5.96832	trChip_vs_input_peak_6168
scaffold_319	1107649	1108937	1289	1108819	39	5.96268	trChip_vs_input_peak_3119
scaffold_45	2886028	2886637	610	2886260	39	5.96268	trChip_vs_input_peak_4314
scaffold_109	614598	614988	391	614780	52	5.95868	trChip_vs_input_peak_293
scaffold_37	2214038	2216535	2498	2214331	52	5.95868	trChip_vs_input_peak_3595
scaffold_467	331094	331782	689	331373	52	5.95868	trChip_vs_input_peak_4392
scaffold_715	315252	315703	452	315469	52	5.95868	trChip_vs_input_peak_5811
scaffold_8	4183082	4183955	874	4183370	52	5.95868	trChip_vs_input_peak_6163
scaffold_372	1111595	1111854	260	1111706	16	5.95399	trChip_vs_input_peak_3630
scaffold_897	180405	180689	285	180588	16	5.95399	trChip_vs_input_peak_6492
scaffold_12660	7491	7805	315	7637	23	5.94592	trChip_vs_input_peak_683
scaffold_68	2137726	2137985	260	2137820	23	5.94592	trChip_vs_input_peak_5621
scaffold_1336	6406	6656	251	6485	27	5.94422	trChip_vs_input_peak_804
scaffold_399	455860	456171	312	456029	41	5.93828	trChip_vs_input_peak_3861
scaffold_448	1001449	1001869	421	1001673	41	5.93828	trChip_vs_input_peak_4289
scaffold_460	860290	861484	1195	861256	41	5.93828	trChip_vs_input_peak_4365
scaffold_507	109152	109782	631	109458	41	5.93828	trChip_vs_input_peak_4711
scaffold_145	437769	438807	1039	437972	59	5.93522	trChip_vs_input_peak_980
scaffold_151	881033	881920	888	881597	59	5.93522	trChip_vs_input_peak_1083
scaffold_302	727379	727987	609	727822	43	5.92837	trChip_vs_input_peak_2964
scaffold_700	22534	23041	508	22672	32	5.92809	trChip_vs_input_peak_5766
scaffold_426	529983	530279	297	530121	21	5.92754	trChip_vs_input_peak_4116
scaffold_593	74440	74953	514	74623	66	5.9168	trChip_vs_input_peak_5166
scaffold_295	150658	151040	383	150853	37	5.91626	trChip_vs_input_peak_2829
scaffold_69	3164474	3164864	391	3164660	37	5.91626	trChip_vs_input_peak_5681
scaffold_753	17184	17602	419	17386	37	5.91626	trChip_vs_input_peak_5952
scaffold_3	1527924	1528390	467	1528065	48	5.91265	trChip_vs_input_peak_2876
scaffold_807	239616	240128	513	239800	42	5.90722	trChip_vs_input_peak_6198
scaffold_1144	151540	151971	432	151773	30	5.90371	trChip_vs_input_peak_456
scaffold_1196	45603	46129	527	45833	30	5.90371	trChip_vs_input_peak_531
scaffold_22	2039399	2040865	1467	2039671	30	5.90371	trChip_vs_input_peak_1957
scaffold_895	185607	187252	1646	186925	73	5.90194	trChip_vs_input_peak_6489
scaffold_517	528721	529088	368	528946	31	5.8997	trChip_vs_input_peak_4774
scaffold_743	470004	470625	622	470274	31	5.8997	trChip_vs_input_peak_5924
scaffold_96	2687186	2687647	462	2687408	52	5.89429	trChip_vs_input_peak_6681
scaffold_135	76320	76776	457	76520	55	5.89358	trChip_vs_input_peak_831
scaffold_6	3008540	3008857	318	3008695	55	5.89358	trChip_vs_input_peak_5198
scaffold_77	2865325	2865757	433	2865603	55	5.89358	trChip_vs_input_peak_6037

scaffold_67	1441420	1441968	549	1441623	36	5.89147	trChip_vs_input_peak_5548
scaffold_218	1102725	1103415	691	1103041	62	5.87883	trChip_vs_input_peak_1922
scaffold_496	404891	405409	519	405224	62	5.87883	trChip_vs_input_peak_4626
scaffold_516	132966	133788	823	133547	62	5.87883	trChip_vs_input_peak_4768
scaffold_330	695289	695709	421	695559	37	5.87736	trChip_vs_input_peak_3229
scaffold_38	805320	805773	454	805608	37	5.87736	trChip_vs_input_peak_3693
scaffold_737	107446	107989	544	107667	37	5.87736	trChip_vs_input_peak_5897
scaffold_780	230069	230448	380	230292	30	5.86977	trChip_vs_input_peak_6079
scaffold_722	287011	287444	434	287241	32	5.86792	trChip_vs_input_peak_5851
scaffold_886	224159	224451	293	224338	15	5.86771	trChip_vs_input_peak_6464
scaffold_681	482145	482825	681	482615	35	5.86553	trChip_vs_input_peak_5632
scaffold_785	326206	326461	256	326264	14	5.8623	trChip_vs_input_peak_6102
scaffold_53	2511960	2512676	717	2512341	45	5.85982	trChip_vs_input_peak_4836
scaffold_10649	3166	3651	486	3486	44	5.85935	trChip_vs_input_peak_219
scaffold_141	291696	292450	755	292060	44	5.85935	trChip_vs_input_peak_932
scaffold_169	1135266	1135811	546	1135592	44	5.85935	trChip_vs_input_peak_1326
scaffold_2589	3453	3840	388	3645	44	5.85935	trChip_vs_input_peak_2392
scaffold_1	31711	32247	537	32023	76	5.85751	trChip_vs_input_peak_2
scaffold_30	2362023	2362884	862	2362504	51	5.84625	trChip_vs_input_peak_2941
scaffold_70	2675286	2675708	423	2675477	51	5.84625	trChip_vs_input_peak_5763
scaffold_916	37267	37790	524	37574	51	5.84625	trChip_vs_input_peak_6559
scaffold_586	477635	478056	422	477857	49	5.83865	trChip_vs_input_peak_5130
scaffold_35	1112983	1113635	653	1113182	44	5.83857	trChip_vs_input_peak_3389
scaffold_56	1951687	1952524	838	1951907	44	5.83857	trChip_vs_input_peak_4980
scaffold_345	1091088	1092008	921	1091618	39	5.83848	trChip_vs_input_peak_3370
scaffold_493	797503	798272	770	797647	39	5.83848	trChip_vs_input_peak_4607
scaffold_576	167339	167912	574	167525	39	5.83848	trChip_vs_input_peak_5069
scaffold_72	714022	714472	451	714255	39	5.83848	trChip_vs_input_peak_5831
scaffold_1019	190708	191322	615	190905	34	5.83835	trChip_vs_input_peak_114
scaffold_174	655377	656239	863	655908	34	5.83835	trChip_vs_input_peak_1413
scaffold_659	108423	108730	308	108619	29	5.83818	trChip_vs_input_peak_5487
scaffold_441	388415	388894	480	388728	20	5.83768	trChip_vs_input_peak_4248
scaffold_167	1044589	1045380	792	1045065	58	5.8363	trChip_vs_input_peak_1310
scaffold_177	1846455	1846962	508	1846729	58	5.8363	trChip_vs_input_peak_1466
scaffold_103	271213	271684	472	271578	19	5.83243	trChip_vs_input_peak_135
scaffold_127	741083	741359	277	741265	19	5.83243	trChip_vs_input_peak_689
scaffold_470	773219	773574	356	773407	19	5.83243	trChip_vs_input_peak_4433
scaffold_66	3098724	3099327	604	3099077	72	5.82219	trChip_vs_input_peak_5502
scaffold_1235	43787	44062	276	43865	26	5.81438	trChip_vs_input_peak_634
scaffold_127	2442820	2443251	432	2443031	26	5.81438	trChip_vs_input_peak_693

scaffold_143	1632885	1633586	702	1633384	26	5.81438	trChip_vs_input_peak_958
scaffold_18	2487561	2487826	266	2487654	26	5.81438	trChip_vs_input_peak_1503
scaffold_335	570283	570531	249	570407	26	5.81438	trChip_vs_input_peak_3262
scaffold_427	811395	811860	466	811609	26	5.81438	trChip_vs_input_peak_4147
scaffold_515	421757	422108	352	421894	26	5.81438	trChip_vs_input_peak_4756
scaffold_311	90978	91603	626	91383	38	5.81361	trChip_vs_input_peak_3059
scaffold_461	191824	192626	803	192394	38	5.81361	trChip_vs_input_peak_4368
scaffold_1	91382	91696	315	91542	33	5.80985	trChip_vs_input_peak_3
scaffold_193	1344164	1344737	574	1344569	28	5.80479	trChip_vs_input_peak_1632
scaffold_376	388203	389162	960	388477	33	5.80382	trChip_vs_input_peak_3650
scaffold_39	157530	158156	627	157928	33	5.80382	trChip_vs_input_peak_3780
scaffold_39	3580637	3581129	493	3580990	33	5.80382	trChip_vs_input_peak_3795
scaffold_69	1245982	1246553	572	1246211	47	5.79836	trChip_vs_input_peak_5674
scaffold_836	303752	304383	632	304181	23	5.79764	trChip_vs_input_peak_6316
scaffold_179	1254700	1255257	558	1255037	40	5.79689	trChip_vs_input_peak_1491
scaffold_2	5050780	5051596	817	5051256	40	5.79689	trChip_vs_input_peak_1712
scaffold_25	2198847	2199266	420	2199037	40	5.79689	trChip_vs_input_peak_2298
scaffold_28	1992627	1993027	401	1992822	40	5.79689	trChip_vs_input_peak_2654
scaffold_356	966014	966535	522	966340	40	5.79689	trChip_vs_input_peak_3466
scaffold_174	1182291	1183253	963	1182817	47	5.79199	trChip_vs_input_peak_1420
scaffold_380	639782	640391	610	640161	54	5.78834	trChip_vs_input_peak_3728
scaffold_432	850355	851165	811	850816	54	5.78834	trChip_vs_input_peak_4183
scaffold_402	439049	439530	482	439257	37	5.78767	trChip_vs_input_peak_3928
scaffold_428	840259	840862	604	840615	61	5.78552	trChip_vs_input_peak_4150
scaffold_55	1543389	1543780	392	1543566	61	5.78552	trChip_vs_input_peak_4944
scaffold_665	121180	122406	1227	121900	61	5.78552	trChip_vs_input_peak_5519
scaffold_517	555547	556033	487	555810	75	5.78144	trChip_vs_input_peak_4775
scaffold_86	2246088	2246472	385	2246284	32	5.77992	trChip_vs_input_peak_6387
scaffold_246	868400	868853	454	868563	41	5.76984	trChip_vs_input_peak_2253
scaffold_30	2106171	2106596	426	2106465	41	5.76984	trChip_vs_input_peak_2931
scaffold_40	1733018	1733301	284	1733157	41	5.76984	trChip_vs_input_peak_3902
scaffold_219	712959	713268	310	713082	27	5.76943	trChip_vs_input_peak_1934
scaffold_26	1016105	1016444	340	1016282	27	5.76943	trChip_vs_input_peak_2400
scaffold_38	2566042	2566318	277	2566204	27	5.76943	trChip_vs_input_peak_3710
scaffold_516	100815	102440	1626	102153	50	5.76334	trChip_vs_input_peak_4767
scaffold_178	585952	586280	329	586098	36	5.76057	trChip_vs_input_peak_1468
scaffold_363	1006179	1006828	650	1006488	36	5.76057	trChip_vs_input_peak_3516
scaffold_437	304277	304572	296	304439	22	5.75445	trChip_vs_input_peak_4199
scaffold_105	899050	899907	858	899283	31	5.74845	trChip_vs_input_peak_168
scaffold_908	238572	239865	1294	239030	31	5.74845	trChip_vs_input_peak_6529

scaffold_833	243451	244390	940	243954	20	5.74649	trChip_vs_input_peak_6312
scaffold_60	2452928	2453329	402	2453143	40	5.74509	trChip_vs_input_peak_5228
scaffold_760	403689	404159	471	403915	40	5.74509	trChip_vs_input_peak_6006
scaffold_161	1980023	1980809	787	1980587	49	5.74295	trChip_vs_input_peak_1251
scaffold_256	1216338	1216709	372	1216549	57	5.73738	trChip_vs_input_peak_2374
scaffold_63	3309693	3310362	670	3309899	50	5.73382	trChip_vs_input_peak_5350
scaffold_281	876447	876723	277	876569	44	5.73243	trChip_vs_input_peak_2685
scaffold_22	2040977	2041349	373	2041159	26	5.73193	trChip_vs_input_peak_1958
scaffold_2069	11975	12280	306	12072	17	5.7313	trChip_vs_input_peak_1804
scaffold_143	651240	651949	710	651515	43	5.72914	trChip_vs_input_peak_952
scaffold_1626	16692	17698	1007	17279	43	5.72914	trChip_vs_input_peak_1260
scaffold_164	416538	417003	466	416797	43	5.72914	trChip_vs_input_peak_1274
scaffold_174	1947990	1948505	516	1948297	43	5.72914	trChip_vs_input_peak_1424
scaffold_475	782187	782922	736	782654	43	5.72914	trChip_vs_input_peak_4487
scaffold_829	241655	242418	764	241974	43	5.72914	trChip_vs_input_peak_6285
scaffold_1008	148036	148460	425	148301	36	5.7227	trChip_vs_input_peak_80
scaffold_1693	57132	58293	1162	57342	36	5.7227	trChip_vs_input_peak_1333
scaffold_222	423000	423515	516	423293	36	5.7227	trChip_vs_input_peak_2007
scaffold_3	7078108	7078353	246	7078208	36	5.7227	trChip_vs_input_peak_2904
scaffold_346	457773	458383	611	458036	36	5.7227	trChip_vs_input_peak_3374
scaffold_451	443214	443701	488	443377	36	5.7227	trChip_vs_input_peak_4321
scaffold_56	3144137	3145070	934	3144815	36	5.7227	trChip_vs_input_peak_4982
scaffold_878	92591	92863	273	92774	36	5.7227	trChip_vs_input_peak_6434
scaffold_124	240552	241541	990	240812	48	5.72188	trChip_vs_input_peak_638
scaffold_355	1001073	1001369	297	1001223	48	5.72188	trChip_vs_input_peak_3451
scaffold_434	760284	760701	418	760453	39	5.71934	trChip_vs_input_peak_4188
scaffold_461	773276	774178	903	773621	29	5.71327	trChip_vs_input_peak_4373
scaffold_571	659747	660286	540	660097	29	5.71327	trChip_vs_input_peak_5063
scaffold_783	124532	124831	300	124698	29	5.71327	trChip_vs_input_peak_6094
scaffold_278	1490762	1491089	328	1490967	22	5.69818	trChip_vs_input_peak_2616
scaffold_38	1055016	1055391	376	1055240	22	5.69818	trChip_vs_input_peak_3698
scaffold_103	2416849	2417320	472	2417073	38	5.69251	trChip_vs_input_peak_146
scaffold_132	544232	546192	1961	545677	60	5.6922	trChip_vs_input_peak_783
scaffold_154	54305	54809	505	54514	60	5.6922	trChip_vs_input_peak_1112
scaffold_219	216910	217291	382	217112	53	5.6831	trChip_vs_input_peak_1930
scaffold_270	1405605	1406396	792	1406186	29	5.68042	trChip_vs_input_peak_2551
scaffold_298	361097	361612	516	361416	29	5.68042	trChip_vs_input_peak_2855
scaffold_85	294307	294593	287	294454	29	5.68042	trChip_vs_input_peak_6345
scaffold_178	1616615	1617409	795	1616804	46	5.67756	trChip_vs_input_peak_1476
scaffold_23	1092746	1093221	476	1093000	46	5.67756	trChip_vs_input_peak_2089

scaffold_389	571786	572249	464	572020	46	5.67756	trChip_vs_input_peak_3770
scaffold_49	1894906	1895231	326	1895065	33	5.67154	trChip_vs_input_peak_4576
scaffold_73	667594	668101	508	667857	46	5.67132	trChip_vs_input_peak_5871
scaffold_760	230339	230734	396	230510	16	5.67056	trChip_vs_input_peak_6002
scaffold_15607	2085	2319	235	2276	15	5.67008	trChip_vs_input_peak_1173
scaffold_23	2866364	2866682	319	2866557	37	5.66455	trChip_vs_input_peak_2094
scaffold_503	537900	538281	382	538099	37	5.66455	trChip_vs_input_peak_4691
scaffold_408	852387	853092	706	852887	41	5.6589	trChip_vs_input_peak_3961
scaffold_561	157360	157964	605	157745	41	5.6589	trChip_vs_input_peak_5007
scaffold_141	595059	595411	353	595218	39	5.6555	trChip_vs_input_peak_934
scaffold_167	1240295	1240777	483	1240543	39	5.6555	trChip_vs_input_peak_1313
scaffold_358	506173	506836	664	506461	39	5.6555	trChip_vs_input_peak_3473
scaffold_41	2856386	2856929	544	2856585	39	5.6555	trChip_vs_input_peak_3985
scaffold_475	587633	590452	2820	590093	39	5.6555	trChip_vs_input_peak_4478
scaffold_475	623227	624040	814	623448	39	5.6555	trChip_vs_input_peak_4479
scaffold_76	2636140	2638437	2298	2636778	39	5.6555	trChip_vs_input_peak_5993
scaffold_951	547	902	356	748	39	5.6555	trChip_vs_input_peak_6643
scaffold_635	535785	536134	350	535907	24	5.64967	trChip_vs_input_peak_5362
scaffold_20	1640929	1641878	950	1641482	56	5.63846	trChip_vs_input_peak_1733
scaffold_482	37976	38407	432	38185	56	5.63846	trChip_vs_input_peak_4533
scaffold_101	2693286	2693618	333	2693427	36	5.63536	trChip_vs_input_peak_102
scaffold_148	2011638	2011978	341	2011843	22	5.63376	trChip_vs_input_peak_1031
scaffold_390	545838	546297	460	546066	32	5.63312	trChip_vs_input_peak_3799
scaffold_545	57609	57921	313	57742	32	5.63312	trChip_vs_input_peak_4916
scaffold_74	2668495	2669323	829	2668750	32	5.63312	trChip_vs_input_peak_5914
scaffold_951	140849	141147	299	141008	40	5.63246	trChip_vs_input_peak_6645
scaffold_199	1546756	1549550	2795	1548251	44	5.63008	trChip_vs_input_peak_1678
scaffold_817	26221	26945	725	26766	48	5.62809	trChip_vs_input_peak_6228
scaffold_50	2377413	2377881	469	2377624	49	5.6214	trChip_vs_input_peak_4663
scaffold_83	2703170	2703668	499	2703438	49	5.6214	trChip_vs_input_peak_6298
scaffold_87	1438266	1438892	627	1438569	49	5.6214	trChip_vs_input_peak_6418
scaffold_68	1774958	1775680	723	1775250	43	5.60504	trChip_vs_input_peak_5618
scaffold_149	1363345	1363788	444	1363576	39	5.60497	trChip_vs_input_peak_1039
scaffold_4	2228307	2228760	454	2228589	35	5.60488	trChip_vs_input_peak_3872
scaffold_109	60718	61316	599	61087	31	5.60477	trChip_vs_input_peak_287
scaffold_85	2328239	2328996	758	2328466	31	5.60477	trChip_vs_input_peak_6357
scaffold_113	622989	623603	615	623402	27	5.60462	trChip_vs_input_peak_421
scaffold_322	112118	112705	588	112291	23	5.60443	trChip_vs_input_peak_3150
scaffold_833	87023	87269	247	87189	19	5.60416	trChip_vs_input_peak_6310
scaffold_37	1857468	1857757	290	1857641	25	5.59904	trChip_vs_input_peak_3587

scaffold_516	29417	29750	334	29630	25	5.59904	trChip_vs_input_peak_4766
scaffold_706	24584	25016	433	24931	25	5.59904	trChip_vs_input_peak_5781
scaffold_959	177512	178194	683	177683	25	5.59904	trChip_vs_input_peak_6663
scaffold_1113	17813	18146	334	17939	42	5.59893	trChip_vs_input_peak_387
scaffold_2321	13602	14122	521	13948	42	5.59893	trChip_vs_input_peak_2134
scaffold_233	1296535	1297491	957	1296762	42	5.59893	trChip_vs_input_peak_2140
scaffold_37	2060050	2060502	453	2060287	42	5.59893	trChip_vs_input_peak_3593
scaffold_571	41570	42038	469	41760	42	5.59893	trChip_vs_input_peak_5055
scaffold_646	397884	398437	554	398244	42	5.59893	trChip_vs_input_peak_5421
scaffold_328	950210	950476	267	950350	16	5.59072	trChip_vs_input_peak_3206
scaffold_435	479153	479636	484	479374	52	5.57785	trChip_vs_input_peak_4191
scaffold_35	3750394	3750852	459	3750546	38	5.57636	trChip_vs_input_peak_3416
scaffold_386	579381	579688	308	579577	34	5.57301	trChip_vs_input_peak_3762
scaffold_477	272964	273528	565	273236	20	5.5724	trChip_vs_input_peak_4492
scaffold_106	2010023	2010445	423	2010328	30	5.56881	trChip_vs_input_peak_211
scaffold_409	886276	886815	540	886639	30	5.56881	trChip_vs_input_peak_3970
scaffold_7	390242	390650	409	390513	30	5.56881	trChip_vs_input_peak_5719
scaffold_88	431223	431611	389	431434	30	5.56881	trChip_vs_input_peak_6442
scaffold_11	5551966	5552296	331	5552105	35	5.56803	trChip_vs_input_peak_351
scaffold_222	1140708	1141165	458	1140967	35	5.56803	trChip_vs_input_peak_2015
scaffold_273	727155	727721	567	727300	35	5.56803	trChip_vs_input_peak_2570
scaffold_279	1323172	1323450	279	1323306	35	5.56803	trChip_vs_input_peak_2632
scaffold_349	573663	574107	445	573847	35	5.56803	trChip_vs_input_peak_3383
scaffold_38	2862700	2863674	975	2863177	35	5.56803	trChip_vs_input_peak_3715
scaffold_709	466889	467497	609	467276	35	5.56803	trChip_vs_input_peak_5794
scaffold_77	2554629	2555138	510	2554822	35	5.56803	trChip_vs_input_peak_6034
scaffold_971	145607	146353	747	146108	35	5.56803	trChip_vs_input_peak_6704
scaffold_85	1629461	1630158	698	1629692	53	5.56397	trChip_vs_input_peak_6352
scaffold_174	2012151	2012686	536	2012510	62	5.56356	trChip_vs_input_peak_1425
scaffold_281	1162345	1162680	336	1162482	26	5.56338	trChip_vs_input_peak_2692
scaffold_37	3139533	3139871	339	3139685	26	5.56338	trChip_vs_input_peak_3604
scaffold_661	265055	265573	519	265262	72	5.55322	trChip_vs_input_peak_5508
scaffold_1495	1329	1643	315	1519	45	5.55065	trChip_vs_input_peak_1051
scaffold_183	7063	7603	541	7226	45	5.55065	trChip_vs_input_peak_1536
scaffold_310	354788	355387	600	355109	45	5.55065	trChip_vs_input_peak_3056
scaffold_33	2906071	2907092	1022	2906621	45	5.55065	trChip_vs_input_peak_3219
scaffold_474	445970	448002	2033	446963	45	5.55065	trChip_vs_input_peak_4455
scaffold_628	405520	405828	309	405697	45	5.55065	trChip_vs_input_peak_5331
scaffold_669	115410	115828	419	115701	45	5.55065	trChip_vs_input_peak_5535
scaffold_71	559602	559907	306	559728	45	5.55065	trChip_vs_input_peak_5798

scaffold_27	2834909	2835510	602	2835077	18	5.54572	trChip_vs_input_peak_2536
scaffold_43	1972634	1972935	302	1972775	18	5.54081	trChip_vs_input_peak_4165
scaffold_470	234776	235116	341	234912	18	5.54081	trChip_vs_input_peak_4428
scaffold_774	59131	59370	240	59255	18	5.54081	trChip_vs_input_peak_6059
scaffold_45	1446492	1447167	676	1446985	33	5.53967	trChip_vs_input_peak_4304
scaffold_671	367981	368299	319	368131	33	5.53967	trChip_vs_input_peak_5579
scaffold_282	852842	853362	521	853093	55	5.53954	trChip_vs_input_peak_2706
scaffold_8	466706	468102	1397	466989	55	5.53954	trChip_vs_input_peak_6150
scaffold_192	369958	370340	383	370110	29	5.53097	trChip_vs_input_peak_1629
scaffold_263	177683	177990	308	177775	29	5.53097	trChip_vs_input_peak_2447
scaffold_688	74262	74818	557	74425	29	5.53097	trChip_vs_input_peak_5651
scaffold_153	2236153	2236491	339	2236277	14	5.52992	trChip_vs_input_peak_1108
scaffold_446	653458	653796	339	653587	14	5.52992	trChip_vs_input_peak_4267
scaffold_115	1000510	1000893	384	1000684	28	5.52283	trChip_vs_input_peak_464
scaffold_1508	16816	17129	314	16993	28	5.52283	trChip_vs_input_peak_1080
scaffold_174	1353992	1354314	323	1354110	28	5.52283	trChip_vs_input_peak_1421
scaffold_424	973907	974298	392	974123	28	5.52283	trChip_vs_input_peak_4111
scaffold_478	786374	786684	311	786522	28	5.52283	trChip_vs_input_peak_4504
scaffold_79	930901	931433	533	931033	28	5.52283	trChip_vs_input_peak_6118
scaffold_807	187436	187858	423	187631	25	5.51964	trChip_vs_input_peak_6197
scaffold_242	750449	750767	319	750657	19	5.51593	trChip_vs_input_peak_2205
scaffold_11021	8016	8487	472	8270	38	5.51411	trChip_vs_input_peak_371
scaffold_1693	53284	55244	1961	54251	38	5.51411	trChip_vs_input_peak_1331
scaffold_81	1739010	1739628	619	1739324	38	5.51411	trChip_vs_input_peak_6206
scaffold_1077	105675	106570	896	106142	48	5.50897	trChip_vs_input_peak_243
scaffold_130	473236	473853	618	473508	48	5.50897	trChip_vs_input_peak_741
scaffold_399	964276	964789	514	964546	48	5.50897	trChip_vs_input_peak_3865
scaffold_4852	7336	8015	680	7795	48	5.50897	trChip_vs_input_peak_4548
scaffold_77	2920658	2921268	611	2920852	58	5.50557	trChip_vs_input_peak_6038
scaffold_1	31199	31474	276	31275	32	5.50473	trChip_vs_input_peak_1
scaffold_38	328317	328873	557	328659	78	5.50137	trChip_vs_input_peak_3685
scaffold_17	5107694	5108184	491	5107911	26	5.4987	trChip_vs_input_peak_1357
scaffold_24	4331989	4332434	446	4332216	39	5.49508	trChip_vs_input_peak_2187
scaffold_522	418703	419067	365	418906	39	5.49508	trChip_vs_input_peak_4801
scaffold_7	3030531	3031250	720	3030858	28	5.49108	trChip_vs_input_peak_5736
scaffold_590	88872	89217	346	89054	46	5.48833	trChip_vs_input_peak_5163
scaffold_2	4546198	4546533	336	4546373	35	5.48305	trChip_vs_input_peak_1710
scaffold_649	485266	486360	1095	486177	35	5.48305	trChip_vs_input_peak_5440
scaffold_38	856078	856399	322	856272	17	5.48219	trChip_vs_input_peak_3695
scaffold_395	427433	427720	288	427587	17	5.48219	trChip_vs_input_peak_3824

scaffold_198	486542	486816	275	486646	51	5.47261	trChip_vs_input_peak_1666
scaffold_148	1669701	1669999	299	1669859	14	5.47233	trChip_vs_input_peak_1030
scaffold_1252	72250	72490	241	72388	13	5.47148	trChip_vs_input_peak_667
scaffold_535	281069	281307	239	281241	13	5.47148	trChip_vs_input_peak_4856
scaffold_535	432003	432237	235	432063	13	5.47148	trChip_vs_input_peak_4858
scaffold_753	448154	448388	235	448285	13	5.47148	trChip_vs_input_peak_5955
scaffold_785	385244	385490	247	385353	13	5.47148	trChip_vs_input_peak_6103
scaffold_1231	49841	50389	549	50095	41	5.46872	trChip_vs_input_peak_630
scaffold_176	1837033	1837600	568	1837232	41	5.46872	trChip_vs_input_peak_1449
scaffold_277	1318063	1318353	291	1318230	41	5.46872	trChip_vs_input_peak_2605
scaffold_398	152014	152514	501	152237	41	5.46872	trChip_vs_input_peak_3845
scaffold_800	312578	313230	653	312974	41	5.46872	trChip_vs_input_peak_6185
scaffold_149	1551207	1551840	634	1551619	38	5.46485	trChip_vs_input_peak_1044
scaffold_206	375654	376342	689	375950	38	5.46485	trChip_vs_input_peak_1798
scaffold_540	544502	545097	596	544704	38	5.46485	trChip_vs_input_peak_4897
scaffold_90	2349971	2350491	521	2350234	38	5.46485	trChip_vs_input_peak_6510
scaffold_108	498186	498593	408	498415	31	5.46242	trChip_vs_input_peak_251
scaffold_219	305705	306062	358	305833	31	5.46242	trChip_vs_input_peak_1932
scaffold_224	1008750	1009290	541	1008941	31	5.46242	trChip_vs_input_peak_2031
scaffold_356	196045	196368	324	196170	31	5.46242	trChip_vs_input_peak_3463
scaffold_49	3114118	3114762	645	3114388	31	5.46242	trChip_vs_input_peak_4587
scaffold_508	84588	85009	422	84775	31	5.46242	trChip_vs_input_peak_4718
scaffold_1116	160685	160948	264	160766	21	5.45043	trChip_vs_input_peak_392
scaffold_1222	68990	69780	791	69181	21	5.45043	trChip_vs_input_peak_612
scaffold_143	951056	951352	297	951144	21	5.45043	trChip_vs_input_peak_953
scaffold_1449	58616	59012	397	58760	21	5.45043	trChip_vs_input_peak_975
scaffold_4832	2926	3648	723	3104	21	5.45043	trChip_vs_input_peak_4538
scaffold_540	696140	696473	334	696327	21	5.45043	trChip_vs_input_peak_4899
scaffold_734	289533	289793	261	289711	21	5.45043	trChip_vs_input_peak_5888
scaffold_96	812700	813020	321	812791	21	5.45043	trChip_vs_input_peak_6667
scaffold_138	361633	362061	429	361856	41	5.44933	trChip_vs_input_peak_879
scaffold_1100	90168	90620	453	90380	27	5.44897	trChip_vs_input_peak_369
scaffold_69	924557	924844	288	924674	27	5.44897	trChip_vs_input_peak_5665
scaffold_239	1176557	1176869	313	1176736	20	5.44861	trChip_vs_input_peak_2177
scaffold_281	1025496	1025907	412	1025699	20	5.44861	trChip_vs_input_peak_2687
scaffold_744	3055	3317	263	3166	13	5.44788	trChip_vs_input_peak_5925
scaffold_322	206869	207729	861	207504	28	5.44692	trChip_vs_input_peak_3151
scaffold_257	822442	823595	1154	823260	54	5.44062	trChip_vs_input_peak_2384
scaffold_92	1359366	1359766	401	1359554	51	5.43786	trChip_vs_input_peak_6571
scaffold_261	409490	410723	1234	409794	44	5.43596	trChip_vs_input_peak_2419

scaffold_35	2131477	2133105	1629	2132871	44	5.43596	trChip_vs_input_peak_3409
scaffold_452	873634	874037	404	873828	44	5.43596	trChip_vs_input_peak_4327
scaffold_48	542211	543046	836	542349	44	5.43596	trChip_vs_input_peak_4507
scaffold_792	8270	8802	533	8593	44	5.43596	trChip_vs_input_peak_6126
scaffold_715	304061	304765	705	304599	37	5.43337	trChip_vs_input_peak_5810
scaffold_11	254360	254774	415	254580	44	5.42999	trChip_vs_input_peak_315
scaffold_185	1677262	1677794	533	1677423	44	5.42999	trChip_vs_input_peak_1553
scaffold_384	529674	530327	654	529902	44	5.42999	trChip_vs_input_peak_3758
scaffold_76	2546258	2546834	577	2546604	44	5.42999	trChip_vs_input_peak_5979
scaffold_427	13	849	837	771	30	5.42962	trChip_vs_input_peak_4120
scaffold_582	380591	380905	315	380742	30	5.42962	trChip_vs_input_peak_5115
scaffold_37	1860670	1861598	929	1861366	23	5.42368	trChip_vs_input_peak_3589
scaffold_598	373810	374206	397	373988	40	5.41994	trChip_vs_input_peak_5184
scaffold_815	330910	331359	450	331184	40	5.41994	trChip_vs_input_peak_6226
scaffold_98	688199	688982	784	688794	40	5.41994	trChip_vs_input_peak_6713
scaffold_22	2031499	2032097	599	2031914	27	5.41887	trChip_vs_input_peak_1951
scaffold_122	458252	458583	332	458452	33	5.41378	trChip_vs_input_peak_592
scaffold_60	1384477	1384827	351	1384665	33	5.41378	trChip_vs_input_peak_5222
scaffold_15	2702742	2703078	337	2702881	34	5.41336	trChip_vs_input_peak_1058
scaffold_174	2024721	2025026	306	2024846	34	5.41336	trChip_vs_input_peak_1426
scaffold_218	736997	737565	569	737176	34	5.41336	trChip_vs_input_peak_1919
scaffold_2403	17879	18362	484	18175	34	5.41336	trChip_vs_input_peak_2193
scaffold_282	344395	344717	323	344553	34	5.41336	trChip_vs_input_peak_2703
scaffold_478	201864	202160	297	202019	34	5.41336	trChip_vs_input_peak_4497
scaffold_49	3645524	3645806	283	3645703	34	5.41336	trChip_vs_input_peak_4594
scaffold_562	706621	707234	614	707045	34	5.41336	trChip_vs_input_peak_5017
scaffold_649	203292	203565	274	203387	34	5.41336	trChip_vs_input_peak_5433
scaffold_681	138714	139129	416	138888	34	5.41336	trChip_vs_input_peak_5631
scaffold_14782	493	881	389	660	16	5.4129	trChip_vs_input_peak_1022
scaffold_221	125832	126086	255	126005	16	5.4129	trChip_vs_input_peak_1998
scaffold_7	2160769	2161230	462	2160891	16	5.4129	trChip_vs_input_peak_5725
scaffold_829	35032	35383	352	35166	16	5.4129	trChip_vs_input_peak_6284
scaffold_92	295226	295492	267	295348	16	5.4129	trChip_vs_input_peak_6565
scaffold_14	2435141	2435852	712	2435640	57	5.41226	trChip_vs_input_peak_906
scaffold_158	1101571	1103084	1514	1101792	80	5.41178	trChip_vs_input_peak_1189
scaffold_1024	91678	92114	437	91780	26	5.40446	trChip_vs_input_peak_131
scaffold_180	866453	866729	277	866606	26	5.40446	trChip_vs_input_peak_1515
scaffold_68	2637822	2638672	851	2638455	70	5.40108	trChip_vs_input_peak_5627
scaffold_142	25765	26783	1019	26041	46	5.39837	trChip_vs_input_peak_935
scaffold_287	709102	709686	585	709330	47	5.39654	trChip_vs_input_peak_2754

scaffold_336	468804	469279	476	469037	49	5.38957	trChip_vs_input_peak_3270
scaffold_12	4456347	4456785	439	4456555	39	5.38942	trChip_vs_input_peak_554
scaffold_163	7478	8113	636	7831	39	5.38942	trChip_vs_input_peak_1262
scaffold_817	316855	317741	887	317194	39	5.38942	trChip_vs_input_peak_6232
scaffold_5	5166271	5166611	341	5166458	29	5.38917	trChip_vs_input_peak_4655
scaffold_68	2941856	2942169	314	2942040	29	5.38917	trChip_vs_input_peak_5630
scaffold_177	1654804	1655162	359	1654969	19	5.38868	trChip_vs_input_peak_1465
scaffold_610	682794	683079	286	682998	19	5.38868	trChip_vs_input_peak_5270
scaffold_11	3602811	3603277	467	3603041	60	5.38694	trChip_vs_input_peak_333
scaffold_356	123002	123582	581	123203	60	5.38694	trChip_vs_input_peak_3461
scaffold_50	2902620	2903359	740	2903143	60	5.38694	trChip_vs_input_peak_4665
scaffold_195	181993	182261	269	182112	24	5.38369	trChip_vs_input_peak_1641
scaffold_282	317935	318215	281	318146	24	5.38369	trChip_vs_input_peak_2702
scaffold_325	864115	864978	864	864278	24	5.38369	trChip_vs_input_peak_3168
scaffold_373	401801	402217	417	401948	24	5.38369	trChip_vs_input_peak_3633
scaffold_409	655423	655733	311	655540	24	5.38369	trChip_vs_input_peak_3969
scaffold_77	3044213	3044544	332	3044328	24	5.38369	trChip_vs_input_peak_6047
scaffold_92	368921	369477	557	369125	24	5.38369	trChip_vs_input_peak_6566
scaffold_321	1157268	1157722	455	1157497	42	5.37985	trChip_vs_input_peak_3146
scaffold_1117	62262	63817	1556	62432	37	5.37273	trChip_vs_input_peak_399
scaffold_207	1046651	1047031	381	1046847	37	5.37273	trChip_vs_input_peak_1818
scaffold_273	84600	84994	395	84809	37	5.37273	trChip_vs_input_peak_2567
scaffold_38	3799373	3799749	377	3799570	37	5.37273	trChip_vs_input_peak_3724
scaffold_512	313828	314298	471	314096	37	5.37273	trChip_vs_input_peak_4743
scaffold_520	203614	203943	330	203808	37	5.37273	trChip_vs_input_peak_4795
scaffold_1104	66284	66582	299	66495	22	5.37091	trChip_vs_input_peak_372
scaffold_28	1921618	1922259	642	1922032	50	5.36737	trChip_vs_input_peak_2652
scaffold_358	779025	779491	467	779237	35	5.36641	trChip_vs_input_peak_3474
scaffold_448	1020059	1020426	368	1020212	35	5.36641	trChip_vs_input_peak_4291
scaffold_607	408254	408785	532	408530	35	5.36641	trChip_vs_input_peak_5255
scaffold_435	934351	935578	1228	935402	38	5.35771	trChip_vs_input_peak_4192
scaffold_614	224568	225460	893	224961	38	5.35771	trChip_vs_input_peak_5277
scaffold_1211	108476	108948	473	108704	25	5.35733	trChip_vs_input_peak_584
scaffold_1069	143580	144444	865	144077	41	5.35027	trChip_vs_input_peak_222
scaffold_814	339729	340021	293	339887	19	5.34755	trChip_vs_input_peak_6223
scaffold_1319	8763	9214	452	8972	28	5.3466	trChip_vs_input_peak_774
scaffold_786	272642	272989	348	272757	28	5.3466	trChip_vs_input_peak_6109
scaffold_220	775821	776405	585	776037	53	5.3417	trChip_vs_input_peak_1988
scaffold_359	613615	614054	440	613844	53	5.3417	trChip_vs_input_peak_3478
scaffold_49	2319092	2320518	1427	2319842	53	5.3417	trChip_vs_input_peak_4583

scaffold_1232	22309	22953	645	22783	40	5.33852	trChip_vs_input_peak_633
scaffold_2	4191735	4192197	463	4192005	40	5.33852	trChip_vs_input_peak_1707
scaffold_311	477483	478560	1078	478390	40	5.33852	trChip_vs_input_peak_3063
scaffold_478	446457	447072	616	446612	40	5.33852	trChip_vs_input_peak_4502
scaffold_63	148068	148621	554	148401	40	5.33852	trChip_vs_input_peak_5338
scaffold_82	2654301	2655010	710	2654522	40	5.33852	trChip_vs_input_peak_6250
scaffold_340	578194	578560	367	578370	47	5.33823	trChip_vs_input_peak_3335
scaffold_95	1150249	1150649	401	1150423	31	5.33792	trChip_vs_input_peak_6634
scaffold_494	68953	69269	317	69076	15	5.337	trChip_vs_input_peak_4610
scaffold_862	75785	76178	394	75994	15	5.337	trChip_vs_input_peak_6396
scaffold_1061	167408	167832	425	167584	27	5.33239	trChip_vs_input_peak_218
scaffold_211	1629068	1629823	756	1629493	27	5.33239	trChip_vs_input_peak_1872
scaffold_473	423632	424142	511	423825	27	5.33239	trChip_vs_input_peak_4443
scaffold_161	716497	716793	297	716578	37	5.32472	trChip_vs_input_peak_1250
scaffold_202	1622201	1622484	284	1622299	23	5.32073	trChip_vs_input_peak_1773
scaffold_367	737286	737710	425	737477	27	5.31609	trChip_vs_input_peak_3544
scaffold_101	2397675	2397909	235	2397819	14	5.3157	trChip_vs_input_peak_98
scaffold_191	958137	958400	264	958317	14	5.3157	trChip_vs_input_peak_1621
scaffold_334	640144	640380	237	640225	14	5.3157	trChip_vs_input_peak_3255
scaffold_208	315969	316985	1017	316229	43	5.31516	trChip_vs_input_peak_1824
scaffold_150	1258071	1258537	467	1258332	21	5.3145	trChip_vs_input_peak_1068
scaffold_171	1727302	1727641	340	1727465	21	5.3145	trChip_vs_input_peak_1375
scaffold_1206	26194	26826	633	26490	43	5.30932	trChip_vs_input_peak_573
scaffold_16189	290	756	467	542	43	5.30932	trChip_vs_input_peak_1254
scaffold_162	260796	261221	426	261014	43	5.30932	trChip_vs_input_peak_1255
scaffold_760	421630	421956	327	421822	43	5.30932	trChip_vs_input_peak_6007
scaffold_261	936178	937750	1573	936691	24	5.30734	trChip_vs_input_peak_2423
scaffold_804	367620	368277	658	368114	27	5.30173	trChip_vs_input_peak_6189
scaffold_101	2111163	2111769	607	2111446	59	5.29863	trChip_vs_input_peak_94
scaffold_1030	176882	177205	324	177069	30	5.29721	trChip_vs_input_peak_149
scaffold_363	532428	532846	419	532637	30	5.29721	trChip_vs_input_peak_3512
scaffold_199	1541832	1542425	594	1542256	33	5.2935	trChip_vs_input_peak_1675
scaffold_459	626504	627076	573	626677	33	5.2935	trChip_vs_input_peak_4346
scaffold_137	58791	59132	342	58921	30	5.29172	trChip_vs_input_peak_860
scaffold_149	83671	84164	494	83851	30	5.29172	trChip_vs_input_peak_1037
scaffold_1580	14069	14697	629	14484	30	5.29172	trChip_vs_input_peak_1193
scaffold_269	1169708	1170362	655	1169975	30	5.29172	trChip_vs_input_peak_2502
scaffold_303	927491	927817	327	927673	30	5.29172	trChip_vs_input_peak_2973
scaffold_434	387698	388128	431	387810	30	5.29172	trChip_vs_input_peak_4187
scaffold_615	330229	330591	363	330419	30	5.29172	trChip_vs_input_peak_5282

scaffold_429	1023461	1024180	720	1023726	36	5.29039	trChip_vs_input_peak_4154
scaffold_565	251995	252802	808	252269	39	5.28775	trChip_vs_input_peak_5024
scaffold_39	55656	56514	859	56320	46	5.28411	trChip_vs_input_peak_3779
scaffold_64	552728	553323	596	552949	46	5.28411	trChip_vs_input_peak_5380
scaffold_670	474247	474581	335	474379	46	5.28411	trChip_vs_input_peak_5568
scaffold_76	2106358	2106814	457	2106531	46	5.28411	trChip_vs_input_peak_5968
scaffold_393	1010271	1010998	728	1010456	45	5.28351	trChip_vs_input_peak_3816
scaffold_911	78153	78624	472	78415	45	5.28351	trChip_vs_input_peak_6553
scaffold_101	2493378	2494019	642	2493816	54	5.27889	trChip_vs_input_peak_100
scaffold_340	717947	718410	464	718205	49	5.26213	trChip_vs_input_peak_3340
scaffold_35	3466538	3466908	371	3466697	49	5.26213	trChip_vs_input_peak_3414
scaffold_640	94067	94531	465	94315	49	5.26213	trChip_vs_input_peak_5396
scaffold_902	79387	80607	1221	79580	49	5.26213	trChip_vs_input_peak_6519
scaffold_16	3517875	3519244	1370	3519067	30	5.25874	trChip_vs_input_peak_1228
scaffold_1079	127585	128013	429	127805	33	5.25869	trChip_vs_input_peak_247
scaffold_11	4967689	4968355	667	4968039	33	5.25869	trChip_vs_input_peak_337
scaffold_1117	11477	11988	512	11770	33	5.25869	trChip_vs_input_peak_393
scaffold_145	533344	533597	254	533527	33	5.25869	trChip_vs_input_peak_982
scaffold_145	850420	850745	326	850614	33	5.25869	trChip_vs_input_peak_987
scaffold_145	2100337	2100750	414	2100540	33	5.25869	trChip_vs_input_peak_991
scaffold_16	2620750	2621286	537	2620989	33	5.25869	trChip_vs_input_peak_1227
scaffold_471	539435	539760	326	539656	33	5.25869	trChip_vs_input_peak_4436
scaffold_50	136836	137341	506	137033	33	5.25869	trChip_vs_input_peak_4657
scaffold_535	241177	242164	988	241790	33	5.25869	trChip_vs_input_peak_4854
scaffold_650	271328	271748	421	271528	33	5.25869	trChip_vs_input_peak_5465
scaffold_667	281157	281515	359	281378	33	5.25869	trChip_vs_input_peak_5531
scaffold_69	564489	566778	2290	565268	47	5.25483	trChip_vs_input_peak_5660
scaffold_186	1742941	1743978	1038	1743631	44	5.25479	trChip_vs_input_peak_1564
scaffold_31	296209	296743	535	296480	44	5.25479	trChip_vs_input_peak_3020
scaffold_34	3452361	3453019	659	3452674	44	5.25479	trChip_vs_input_peak_3330
scaffold_414	596650	597104	455	596863	38	5.25469	trChip_vs_input_peak_4024
scaffold_103	2049905	2050247	343	2050070	35	5.25463	trChip_vs_input_peak_144
scaffold_429	692179	692990	812	692579	35	5.25463	trChip_vs_input_peak_4152
scaffold_64	1889112	1889958	847	1889592	35	5.25463	trChip_vs_input_peak_5392
scaffold_647	3409	3934	526	3729	35	5.25463	trChip_vs_input_peak_5422
scaffold_55	297853	298243	391	298025	32	5.25456	trChip_vs_input_peak_4935
scaffold_67	2866062	2866648	587	2866235	32	5.25456	trChip_vs_input_peak_5558
scaffold_376	702337	702588	252	702416	26	5.25436	trChip_vs_input_peak_3659
scaffold_697	354180	354961	782	354782	26	5.25436	trChip_vs_input_peak_5708
scaffold_10	489263	489654	392	489496	23	5.25423	trChip_vs_input_peak_47

scaffold_210	593124	593459	336	593283	23	5.25423	trChip_vs_input_peak_1854
scaffold_231	1086387	1086696	310	1086487	23	5.25423	trChip_vs_input_peak_2119
scaffold_82	2387830	2388208	379	2388059	20	5.25406	trChip_vs_input_peak_6244
scaffold_886	268602	269067	466	268967	20	5.25406	trChip_vs_input_peak_6465
scaffold_279	247875	248197	323	248069	17	5.25384	trChip_vs_input_peak_2617
scaffold_827	49022	49405	384	49187	17	5.25384	trChip_vs_input_peak_6271
scaffold_147	1321156	1321500	345	1321346	14	5.25352	trChip_vs_input_peak_1014
scaffold_597	89011	89309	299	89174	14	5.25352	trChip_vs_input_peak_5180
scaffold_66	1783639	1783998	360	1783836	14	5.25352	trChip_vs_input_peak_5493
scaffold_1591	11964	12228	265	12043	17	5.24919	trChip_vs_input_peak_1211
scaffold_494	62554	62810	257	62641	17	5.24919	trChip_vs_input_peak_4609
scaffold_544	506933	507491	559	507334	17	5.24919	trChip_vs_input_peak_4914
scaffold_99	2248456	2249134	679	2248928	52	5.24278	trChip_vs_input_peak_6739
scaffold_155	2119470	2119848	379	2119633	36	5.23134	trChip_vs_input_peak_1167
scaffold_283	399056	399534	479	399223	36	5.23134	trChip_vs_input_peak_2711
scaffold_416	455242	455649	408	455489	36	5.23134	trChip_vs_input_peak_4040
scaffold_434	324222	324718	497	324516	36	5.23134	trChip_vs_input_peak_4186
scaffold_451	460603	461227	625	460778	36	5.23134	trChip_vs_input_peak_4322
scaffold_782	169731	171101	1371	170719	36	5.23134	trChip_vs_input_peak_6090
scaffold_225	1393621	1394127	507	1393841	55	5.22563	trChip_vs_input_peak_2047
scaffold_280	49559	49984	426	49729	55	5.22563	trChip_vs_input_peak_2665
scaffold_667	13592	14097	506	13868	55	5.22563	trChip_vs_input_peak_5528
scaffold_280	20016	20426	411	20231	34	5.21734	trChip_vs_input_peak_2664
scaffold_423	88638	89315	678	89095	34	5.21734	trChip_vs_input_peak_4102
scaffold_870	1162	1527	366	1334	34	5.21734	trChip_vs_input_peak_6425
scaffold_22	2043865	2044180	316	2044053	22	5.21451	trChip_vs_input_peak_1961
scaffold_399	1101856	1102522	667	1102294	31	5.2138	trChip_vs_input_peak_3866
scaffold_416	84510	84836	327	84699	31	5.2138	trChip_vs_input_peak_4037
scaffold_326	1055744	1057794	2051	1056398	58	5.21032	trChip_vs_input_peak_3190
scaffold_174	609490	609955	466	609664	28	5.20954	trChip_vs_input_peak_1409
scaffold_189	751685	752009	325	751797	28	5.20954	trChip_vs_input_peak_1580
scaffold_359	563742	564252	511	563957	39	5.20831	trChip_vs_input_peak_3476
scaffold_555	27617	28527	911	27835	39	5.20831	trChip_vs_input_peak_4963
scaffold_560	361601	362315	715	361785	39	5.20831	trChip_vs_input_peak_4995
scaffold_73	1226579	1226914	336	1226741	39	5.20831	trChip_vs_input_peak_5879
scaffold_756	113040	113728	689	113217	39	5.20831	trChip_vs_input_peak_5956
scaffold_806	112910	113178	269	113042	39	5.20831	trChip_vs_input_peak_6192
scaffold_925	256051	256341	291	256214	39	5.20831	trChip_vs_input_peak_6590
scaffold_560	359336	361152	1817	360531	51	5.20483	trChip_vs_input_peak_4994
scaffold_1371	77529	77763	235	77675	20	5.20268	trChip_vs_input_peak_876

scaffold_14589	5761	6208	448	5956	20	5.20268	trChip_vs_input_peak_993
scaffold_232	1261511	1262015	505	1261933	20	5.20268	trChip_vs_input_peak_2129
scaffold_477	303878	304371	494	304058	20	5.20268	trChip_vs_input_peak_4494
scaffold_5	5141905	5142158	254	5142063	20	5.20268	trChip_vs_input_peak_4654
scaffold_32	1310641	1312166	1526	1311069	22	5.1977	trChip_vs_input_peak_3126
scaffold_20	1758861	1762981	4121	1760280	61	5.19656	trChip_vs_input_peak_1734
scaffold_177	1547910	1548458	549	1548089	39	5.18984	trChip_vs_input_peak_1464
scaffold_268	649354	649810	457	649568	39	5.18984	trChip_vs_input_peak_2495
scaffold_423	593472	594083	612	593869	39	5.18984	trChip_vs_input_peak_4104
scaffold_690	301565	301978	414	301747	39	5.18984	trChip_vs_input_peak_5687
scaffold_19	1368264	1368633	370	1368440	19	5.18915	trChip_vs_input_peak_1598
scaffold_496	464276	464632	357	464453	19	5.18915	trChip_vs_input_peak_4627
scaffold_119	2141307	2141626	320	2141474	42	5.18865	trChip_vs_input_peak_525
scaffold_22	2035052	2036125	1074	2035799	42	5.18865	trChip_vs_input_peak_1954
scaffold_38	3612723	3613508	786	3612989	36	5.1846	trChip_vs_input_peak_3722
scaffold_17	3985212	3985707	496	3985477	64	5.18414	trChip_vs_input_peak_1352
scaffold_1	4785175	4785431	257	4785264	18	5.17898	trChip_vs_input_peak_22
scaffold_211	1300298	1300783	486	1300499	33	5.17844	trChip_vs_input_peak_1869
scaffold_251	1336342	1336944	603	1336550	33	5.17844	trChip_vs_input_peak_2335
scaffold_671	13097	13612	516	13499	33	5.17844	trChip_vs_input_peak_5573
scaffold_959	60371	60625	255	60486	16	5.17763	trChip_vs_input_peak_6660
scaffold_27	1834765	1835337	573	1834972	45	5.17168	trChip_vs_input_peak_2525
scaffold_296	143814	144243	430	144027	45	5.17168	trChip_vs_input_peak_2840
scaffold_649	510005	510959	955	510805	45	5.17168	trChip_vs_input_peak_5441
scaffold_1	6652673	6652977	305	6652847	30	5.17111	trChip_vs_input_peak_39
scaffold_364	622616	622892	277	622769	30	5.17111	trChip_vs_input_peak_3521
scaffold_6	3189633	3190108	476	3190008	30	5.17111	trChip_vs_input_peak_5200
scaffold_25	158398	159699	1302	158760	44	5.16865	trChip_vs_input_peak_2288
scaffold_1070	34063	34329	267	34197	23	5.16834	trChip_vs_input_peak_232
scaffold_1463	37541	37934	394	37752	23	5.16834	trChip_vs_input_peak_1008
scaffold_153	431938	432247	310	432063	23	5.16834	trChip_vs_input_peak_1103
scaffold_165	2013853	2014240	388	2014033	23	5.16834	trChip_vs_input_peak_1289
scaffold_1662	22993	23448	456	23351	23	5.16834	trChip_vs_input_peak_1305
scaffold_435	471063	471496	434	471274	23	5.16834	trChip_vs_input_peak_4190
scaffold_919	206320	206605	286	206478	23	5.16834	trChip_vs_input_peak_6563
scaffold_186	933300	933749	450	933423	24	5.16647	trChip_vs_input_peak_1557
scaffold_12	4949014	4949261	248	4949190	27	5.16224	trChip_vs_input_peak_557
scaffold_566	454520	454786	267	454706	27	5.16224	trChip_vs_input_peak_5032
scaffold_591	41212	41460	249	41327	27	5.16224	trChip_vs_input_peak_5164
scaffold_491	477668	478015	348	477885	20	5.16191	trChip_vs_input_peak_4599

scaffold_550	391812	392094	283	392021	13	5.16126	trChip_vs_input_peak_4956
scaffold_473	711445	711857	413	711628	18	5.15891	trChip_vs_input_peak_4448
scaffold_31	3377573	3377979	407	3377752	48	5.15688	trChip_vs_input_peak_3044
scaffold_386	364084	364602	519	364417	48	5.15688	trChip_vs_input_peak_3761
scaffold_11	4969417	4970476	1060	4970248	28	5.15666	trChip_vs_input_peak_338
scaffold_22	1957593	1958165	573	1957850	38	5.15556	trChip_vs_input_peak_1946
scaffold_297	665410	666154	745	665924	38	5.15556	trChip_vs_input_peak_2848
scaffold_460	131501	131869	369	131698	38	5.15556	trChip_vs_input_peak_4360
scaffold_376	758829	759084	256	758943	21	5.15457	trChip_vs_input_peak_3661
scaffold_1331	54972	55299	328	55125	24	5.15128	trChip_vs_input_peak_803
scaffold_281	104610	105087	478	104892	24	5.15128	trChip_vs_input_peak_2679
scaffold_853	31099	31806	708	31565	24	5.15128	trChip_vs_input_peak_6370
scaffold_474	604877	605701	825	605487	35	5.14741	trChip_vs_input_peak_4467
scaffold_810	35293	35671	379	35504	35	5.14741	trChip_vs_input_peak_6213
scaffold_803	261240	261474	235	261305	17	5.14665	trChip_vs_input_peak_6188
scaffold_373	456795	457648	854	457316	28	5.1436	trChip_vs_input_peak_3636
scaffold_1070	75538	75885	348	75724	26	5.14194	trChip_vs_input_peak_234
scaffold_126	1826844	1827228	385	1827034	26	5.14194	trChip_vs_input_peak_672
scaffold_290	1185807	1186103	297	1185966	26	5.14194	trChip_vs_input_peak_2805
scaffold_30	1301670	1301904	235	1301758	26	5.14194	trChip_vs_input_peak_2916
scaffold_374	546955	547266	312	547125	26	5.14194	trChip_vs_input_peak_3640
scaffold_470	418507	418813	307	418586	26	5.14194	trChip_vs_input_peak_4429
scaffold_49	1544658	1544993	336	1544811	26	5.14194	trChip_vs_input_peak_4572
scaffold_706	158070	158517	448	158300	26	5.14194	trChip_vs_input_peak_5782
scaffold_228	217228	217989	762	217596	32	5.13781	trChip_vs_input_peak_2073
scaffold_35	1587867	1588183	317	1588051	32	5.13781	trChip_vs_input_peak_3400
scaffold_452	859847	860184	338	860032	32	5.13781	trChip_vs_input_peak_4326
scaffold_847	299764	300259	496	300077	32	5.13781	trChip_vs_input_peak_6340
scaffold_120	2250199	2250500	302	2250419	21	5.13739	trChip_vs_input_peak_569
scaffold_110	322762	323251	490	322987	27	5.13521	trChip_vs_input_peak_356
scaffold_2	1229623	1230504	882	1229984	29	5.12633	trChip_vs_input_peak_1694
scaffold_369	378593	378936	344	378800	29	5.12633	trChip_vs_input_peak_3564
scaffold_518	282632	283471	840	282910	29	5.12633	trChip_vs_input_peak_4778
scaffold_149	1469714	1470453	740	1470230	29	5.12102	trChip_vs_input_peak_1040
scaffold_209	1421209	1421757	549	1421398	29	5.12102	trChip_vs_input_peak_1832
scaffold_236	97505	97798	294	97662	29	5.12102	trChip_vs_input_peak_2153
scaffold_250	1002521	1002984	464	1002686	29	5.12102	trChip_vs_input_peak_2315
scaffold_41	2001376	2001969	594	2001564	29	5.12102	trChip_vs_input_peak_3978
scaffold_444	247593	248024	432	247805	29	5.12102	trChip_vs_input_peak_4257
scaffold_480	137462	139224	1763	138155	29	5.12102	trChip_vs_input_peak_4526

scaffold_76	2541247	2542293	1047	2541839	29	5.12102	trChip_vs_input_peak_5976
scaffold_163	45638	46082	445	45810	37	5.11995	trChip_vs_input_peak_1264
scaffold_501	828476	828879	404	828659	37	5.11995	trChip_vs_input_peak_4680
scaffold_55	3599670	3599997	328	3599845	37	5.11995	trChip_vs_input_peak_4955
scaffold_67	1602437	1602920	484	1602650	37	5.11995	trChip_vs_input_peak_5553
scaffold_582	136028	136387	360	136262	18	5.11924	trChip_vs_input_peak_5110
scaffold_6361	481	722	242	583	18	5.11924	trChip_vs_input_peak_5367
scaffold_250	825683	826297	615	826066	60	5.11275	trChip_vs_input_peak_2313
scaffold_108	1561256	1561696	441	1561483	26	5.11238	trChip_vs_input_peak_262
scaffold_56	1096029	1096687	659	1096470	26	5.11238	trChip_vs_input_peak_4978
scaffold_4	3470741	3471387	647	3471048	34	5.10867	trChip_vs_input_peak_3874
scaffold_41	1228079	1228404	326	1228214	42	5.10634	trChip_vs_input_peak_3974
scaffold_1	6302969	6303291	323	6303138	32	5.10403	trChip_vs_input_peak_35
scaffold_103	1226630	1226989	360	1226769	32	5.10403	trChip_vs_input_peak_141
scaffold_220	1664299	1664992	694	1664882	32	5.10403	trChip_vs_input_peak_1994
scaffold_2880	7344	7810	467	7606	32	5.10403	trChip_vs_input_peak_2761
scaffold_37	1116670	1117204	535	1116889	32	5.10403	trChip_vs_input_peak_3575
scaffold_537	34644	35024	381	34864	32	5.10403	trChip_vs_input_peak_4865
scaffold_55	327794	328773	980	328151	32	5.10403	trChip_vs_input_peak_4937
scaffold_782	30923	31289	367	31107	32	5.10403	trChip_vs_input_peak_6086
scaffold_782	156027	156380	354	156194	32	5.10403	trChip_vs_input_peak_6088
scaffold_130	841993	843070	1078	842522	39	5.09549	trChip_vs_input_peak_745
scaffold_252	185644	187028	1385	186624	39	5.09549	trChip_vs_input_peak_2343
scaffold_220	1460150	1460614	465	1460335	31	5.09533	trChip_vs_input_peak_1991
scaffold_299	164206	164559	354	164371	31	5.09533	trChip_vs_input_peak_2859
scaffold_599	607022	607447	426	607138	31	5.09533	trChip_vs_input_peak_5188
scaffold_103	1761321	1761650	330	1761461	23	5.09505	trChip_vs_input_peak_143
scaffold_127	489967	490528	562	490095	23	5.09505	trChip_vs_input_peak_686
scaffold_191	1961526	1961769	244	1961582	23	5.09505	trChip_vs_input_peak_1627
scaffold_41	1348223	1348516	294	1348428	23	5.09505	trChip_vs_input_peak_3975
scaffold_84	1779092	1779499	408	1779242	23	5.09505	trChip_vs_input_peak_6327
scaffold_122	1292212	1292607	396	1292390	35	5.08995	trChip_vs_input_peak_600
scaffold_160	705486	706342	857	706198	35	5.08995	trChip_vs_input_peak_1239
scaffold_163	11905	12208	304	12073	35	5.08995	trChip_vs_input_peak_1263
scaffold_189	1876374	1876878	505	1876722	35	5.08995	trChip_vs_input_peak_1594
scaffold_326	215248	215567	320	215389	35	5.08995	trChip_vs_input_peak_3185
scaffold_351	167217	167771	555	167505	35	5.08995	trChip_vs_input_peak_3421
scaffold_56	3465408	3465956	549	3465744	35	5.08995	trChip_vs_input_peak_4984
scaffold_80	1976212	1976630	419	1976428	35	5.08995	trChip_vs_input_peak_6178
scaffold_678	442172	442549	378	442365	16	5.08915	trChip_vs_input_peak_5603

scaffold_850	25312	25957	646	25771	44	5.0853	trChip_vs_input_peak_6362
scaffold_307	1029344	1029612	269	1029490	17	5.08441	trChip_vs_input_peak_2999
scaffold_184	1469844	1470564	721	1470255	36	5.08295	trChip_vs_input_peak_1546
scaffold_191	1212150	1212458	309	1212305	36	5.08295	trChip_vs_input_peak_1623
scaffold_259	938247	939453	1207	939052	36	5.08295	trChip_vs_input_peak_2393
scaffold_1620	54831	55091	261	54951	12	5.08066	trChip_vs_input_peak_1259
scaffold_195	647595	647829	235	647807	12	5.08066	trChip_vs_input_peak_1643
scaffold_198	55152	55408	257	55256	12	5.08066	trChip_vs_input_peak_1663
scaffold_655	574864	575102	239	574910	12	5.08066	trChip_vs_input_peak_5476
scaffold_824	17690	17931	242	17891	12	5.08066	trChip_vs_input_peak_6265
scaffold_836	171259	171493	235	171294	12	5.08066	trChip_vs_input_peak_6315
scaffold_166	1755680	1756011	332	1755778	28	5.07932	trChip_vs_input_peak_1302
scaffold_18	5172556	5173020	465	5172747	28	5.07932	trChip_vs_input_peak_1511
scaffold_303	723717	724535	819	723898	28	5.07932	trChip_vs_input_peak_2969
scaffold_414	453658	454224	567	453845	28	5.07932	trChip_vs_input_peak_4022
scaffold_585	607740	608141	402	607959	28	5.07932	trChip_vs_input_peak_5125
scaffold_137	2039808	2040223	416	2039999	38	5.0781	trChip_vs_input_peak_868
scaffold_30	2229429	2229831	403	2229608	38	5.0781	trChip_vs_input_peak_2934
scaffold_353	159373	159818	446	159586	38	5.0781	trChip_vs_input_peak_3431
scaffold_389	714454	714938	485	714730	38	5.0781	trChip_vs_input_peak_3772
scaffold_461	217514	217946	433	217674	38	5.0781	trChip_vs_input_peak_4369
scaffold_474	509181	509524	344	509364	38	5.0781	trChip_vs_input_peak_4462
scaffold_543	758938	759712	775	759484	38	5.0781	trChip_vs_input_peak_4910
scaffold_721	185407	185699	293	185613	38	5.0781	trChip_vs_input_peak_5844
scaffold_30	2288619	2289792	1174	2289648	41	5.07357	trChip_vs_input_peak_2937
scaffold_364	140173	140518	346	140314	20	5.07293	trChip_vs_input_peak_3519
scaffold_369	1012442	1012900	459	1012716	20	5.07293	trChip_vs_input_peak_3565
scaffold_630	123211	123561	351	123412	20	5.07293	trChip_vs_input_peak_5354
scaffold_246	75690	76034	345	75910	33	5.06828	trChip_vs_input_peak_2245
scaffold_288	1237678	1238035	358	1237847	33	5.06828	trChip_vs_input_peak_2760
scaffold_378	175438	175893	456	175700	33	5.06828	trChip_vs_input_peak_3679
scaffold_72	591001	591549	549	591186	33	5.06828	trChip_vs_input_peak_5830
scaffold_110	320792	322403	1612	321402	41	5.06799	trChip_vs_input_peak_355
scaffold_122	478137	478654	518	478343	41	5.06799	trChip_vs_input_peak_593
scaffold_154	1514644	1515216	573	1515011	41	5.06799	trChip_vs_input_peak_1132
scaffold_58	16776	17462	687	17094	41	5.06799	trChip_vs_input_peak_5079
scaffold_230	933230	933598	369	933383	24	5.06197	trChip_vs_input_peak_2111
scaffold_59	3160758	3161855	1098	3161179	38	5.0601	trChip_vs_input_peak_5162
scaffold_94	921706	922276	571	921929	38	5.0601	trChip_vs_input_peak_6619
scaffold_313	1338982	1339352	371	1339166	25	5.05976	trChip_vs_input_peak_3082

scaffold_649	310252	310803	552	310462	25	5.05976	trChip_vs_input_peak_5437
scaffold_792	323876	324307	432	324123	25	5.05976	trChip_vs_input_peak_6135
scaffold_117	851713	852242	530	852052	44	5.05926	trChip_vs_input_peak_488
scaffold_30	3951195	3951520	326	3951369	44	5.05926	trChip_vs_input_peak_2950
scaffold_104	2159864	2160389	526	2160202	47	5.05164	trChip_vs_input_peak_162
scaffold_177	1527160	1527910	751	1527415	47	5.05164	trChip_vs_input_peak_1463
scaffold_199	79182	79572	391	79427	47	5.05164	trChip_vs_input_peak_1673
scaffold_259	1055904	1056287	384	1056106	47	5.05164	trChip_vs_input_peak_2394
scaffold_312	226096	227098	1003	226339	47	5.05164	trChip_vs_input_peak_3076
scaffold_368	239678	239981	304	239845	47	5.05164	trChip_vs_input_peak_3553
scaffold_174	582933	583210	278	583095	30	5.05087	trChip_vs_input_peak_1407
scaffold_35	1601440	1602880	1441	1601865	30	5.05087	trChip_vs_input_peak_3404
scaffold_715	474530	475227	698	475112	30	5.05087	trChip_vs_input_peak_5813
scaffold_28	526587	526849	263	526728	15	5.04861	trChip_vs_input_peak_2641
scaffold_248	161955	162606	652	162372	50	5.04494	trChip_vs_input_peak_2271
scaffold_338	208798	209363	566	209167	50	5.04494	trChip_vs_input_peak_3286
scaffold_422	974595	975329	735	975023	50	5.04494	trChip_vs_input_peak_4099
scaffold_669	428754	429129	376	428971	50	5.04494	trChip_vs_input_peak_5536
scaffold_278	173090	173741	652	173377	35	5.04447	trChip_vs_input_peak_2607
scaffold_627	581233	581782	550	581409	35	5.04447	trChip_vs_input_peak_5327
scaffold_154	1768789	1769187	399	1768966	17	5.04374	trChip_vs_input_peak_1134
scaffold_450	562054	562575	522	562286	53	5.039	trChip_vs_input_peak_4317
scaffold_230	362862	363441	580	363240	27	5.0299	trChip_vs_input_peak_2107
scaffold_294	183410	184018	609	183851	27	5.0299	trChip_vs_input_peak_2820
scaffold_781	71374	72559	1186	72080	27	5.0299	trChip_vs_input_peak_6081
scaffold_949	41640	42244	605	42091	27	5.0299	trChip_vs_input_peak_6631
scaffold_102	23753	24836	1084	24706	32	5.02613	trChip_vs_input_peak_116
scaffold_154	418017	418340	324	418188	32	5.02613	trChip_vs_input_peak_1120
scaffold_42	3652101	3652742	642	3652254	32	5.02613	trChip_vs_input_peak_4090
scaffold_722	290677	291335	659	291120	32	5.02613	trChip_vs_input_peak_5852
scaffold_954	184340	184685	346	184520	32	5.02613	trChip_vs_input_peak_6651
scaffold_116	2635481	2635895	415	2635706	37	5.02336	trChip_vs_input_peak_476
scaffold_155	746329	747088	760	746676	37	5.02336	trChip_vs_input_peak_1144
scaffold_284	1421673	1422221	549	1421992	37	5.02336	trChip_vs_input_peak_2728
scaffold_343	432049	432459	411	432245	37	5.02336	trChip_vs_input_peak_3357
scaffold_210	887088	890424	3337	889366	65	5.02072	trChip_vs_input_peak_1855
scaffold_211	762925	764135	1211	763573	44	5.00459	trChip_vs_input_peak_1867
scaffold_248	659664	660003	340	659777	29	5.0043	trChip_vs_input_peak_2273
scaffold_285	882724	883231	508	883063	29	5.0043	trChip_vs_input_peak_2733
scaffold_315	516434	516754	321	516540	29	5.0043	trChip_vs_input_peak_3094

scaffold_372	609565	610175	611	610012	29	5.0043	trChip_vs_input_peak_3620
scaffold_418	327528	327787	260	327632	29	5.0043	trChip_vs_input_peak_4058
scaffold_427	1064	1951	888	1460	29	5.0043	trChip_vs_input_peak_4121
scaffold_4933	750	1276	527	1060	29	5.0043	trChip_vs_input_peak_4608
scaffold_225	1049171	1049523	353	1049316	24	5.00413	trChip_vs_input_peak_2044
scaffold_475	585747	586160	414	585908	24	5.00413	trChip_vs_input_peak_4476
scaffold_480	674256	674568	313	674390	24	5.00413	trChip_vs_input_peak_4529
scaffold_399	651306	651573	268	651510	19	5.00387	trChip_vs_input_peak_3863
scaffold_48	1421322	1421556	235	1421479	19	5.00387	trChip_vs_input_peak_4512
scaffold_692	215477	215872	396	215696	19	5.00387	trChip_vs_input_peak_5695
scaffold_582	146764	147049	286	146816	15	5.00355	trChip_vs_input_peak_5111
scaffold_420	199817	200162	346	199986	25	4.99046	trChip_vs_input_peak_4093
scaffold_8	558446	558964	519	558770	41	4.98758	trChip_vs_input_peak_6151
scaffold_284	1050405	1051014	610	1050809	19	4.98607	trChip_vs_input_peak_2723
scaffold_278	237578	237861	284	237749	36	4.98522	trChip_vs_input_peak_2609
scaffold_666	319389	320019	631	319650	36	4.98522	trChip_vs_input_peak_5523
scaffold_1489	20769	21273	505	21088	31	4.98212	trChip_vs_input_peak_1034
scaffold_414	815608	816836	1229	816144	31	4.98212	trChip_vs_input_peak_4028
scaffold_54	3367985	3368393	409	3368201	31	4.98212	trChip_vs_input_peak_4887
scaffold_1144	45748	46296	549	45982	26	4.97787	trChip_vs_input_peak_454
scaffold_285	870070	870728	659	870460	48	4.97562	trChip_vs_input_peak_2730
scaffold_326	1101354	1102023	670	1101645	21	4.97171	trChip_vs_input_peak_3191
scaffold_673	35339	35661	323	35518	21	4.97171	trChip_vs_input_peak_5584
scaffold_1009	44103	44604	502	44385	33	4.9627	trChip_vs_input_peak_81
scaffold_174	5250	5746	497	5553	33	4.9627	trChip_vs_input_peak_1400
scaffold_289	482521	482921	401	482712	33	4.9627	trChip_vs_input_peak_2772
scaffold_68	929300	930205	906	929820	33	4.9627	trChip_vs_input_peak_5610
scaffold_881	246186	246688	503	246389	33	4.9627	trChip_vs_input_peak_6459
scaffold_230	1447386	1447636	251	1447480	16	4.96196	trChip_vs_input_peak_2115
scaffold_250	1292001	1292240	240	1292069	16	4.96196	trChip_vs_input_peak_2318
scaffold_427	137610	138006	397	137762	16	4.96196	trChip_vs_input_peak_4130
scaffold_1218	29411	29645	235	29605	13	4.96132	trChip_vs_input_peak_588
scaffold_440	1009523	1009824	302	1009654	13	4.96132	trChip_vs_input_peak_4247
scaffold_4988	4318	4558	241	4409	13	4.96132	trChip_vs_input_peak_4633
scaffold_1712	12499	12835	337	12710	16	4.95756	trChip_vs_input_peak_1376
scaffold_34	2553816	2554112	297	2554008	16	4.95756	trChip_vs_input_peak_3324
scaffold_474	41806	42040	235	41927	16	4.95756	trChip_vs_input_peak_4451
scaffold_686	165333	165580	248	165469	16	4.95756	trChip_vs_input_peak_5642
scaffold_775	181736	182094	359	181896	16	4.95756	trChip_vs_input_peak_6061
scaffold_215	1075828	1076324	497	1076179	28	4.95546	trChip_vs_input_peak_1894

scaffold_231	728409	728717	309	728549	28	4.95546	trChip_vs_input_peak_2118
scaffold_1094	46759	47251	493	46969	19	4.95494	trChip_vs_input_peak_307
scaffold_1266	16264	16574	311	16370	19	4.95494	trChip_vs_input_peak_679
scaffold_540	19689	20195	507	19861	19	4.95494	trChip_vs_input_peak_4888
scaffold_63	3211929	3212163	235	3212077	19	4.95494	trChip_vs_input_peak_5346
scaffold_938	239409	239733	325	239637	19	4.95494	trChip_vs_input_peak_6612
scaffold_1100	65040	65275	236	65167	22	4.95299	trChip_vs_input_peak_368
scaffold_217	483759	483993	235	483850	22	4.95299	trChip_vs_input_peak_1907
scaffold_453	648053	648472	420	648246	22	4.95299	trChip_vs_input_peak_4329
scaffold_528	320283	320619	337	320478	22	4.95299	trChip_vs_input_peak_4811
scaffold_65	2472273	2472636	364	2472432	22	4.95299	trChip_vs_input_peak_5460
scaffold_933	120649	121365	717	120999	22	4.95299	trChip_vs_input_peak_6609
scaffold_961	201138	201741	604	201502	22	4.95299	trChip_vs_input_peak_6683
scaffold_14	4159042	4159403	362	4159221	25	4.9515	trChip_vs_input_peak_916
scaffold_251	166978	167530	553	167265	25	4.9515	trChip_vs_input_peak_2328
scaffold_531	710545	711315	771	711093	25	4.9515	trChip_vs_input_peak_4849
scaffold_1051	63207	63541	335	63403	28	4.95032	trChip_vs_input_peak_190
scaffold_182	1687786	1688132	347	1687978	28	4.95032	trChip_vs_input_peak_1534
scaffold_256	452149	452918	770	452752	28	4.95032	trChip_vs_input_peak_2368
scaffold_38	2831074	2831375	302	2831279	28	4.95032	trChip_vs_input_peak_3713
scaffold_5996	2451	2794	344	2611	28	4.95032	trChip_vs_input_peak_5192
scaffold_649	8645	8915	271	8823	28	4.95032	trChip_vs_input_peak_5431
scaffold_769	33700	34502	803	34113	28	4.95032	trChip_vs_input_peak_6019
scaffold_1	6870097	6870501	405	6870322	31	4.94936	trChip_vs_input_peak_41
scaffold_140	101233	101880	648	101534	31	4.94936	trChip_vs_input_peak_924
scaffold_155	2171172	2171485	314	2171312	31	4.94936	trChip_vs_input_peak_1168
scaffold_178	2071394	2071644	251	2071525	31	4.94936	trChip_vs_input_peak_1479
scaffold_19	1393852	1394369	518	1394097	31	4.94936	trChip_vs_input_peak_1599
scaffold_209	34584	34832	249	34683	31	4.94936	trChip_vs_input_peak_1829
scaffold_261	1543108	1543486	379	1543256	31	4.94936	trChip_vs_input_peak_2429
scaffold_30	1413824	1414708	885	1414259	31	4.94936	trChip_vs_input_peak_2918
scaffold_376	1121146	1121558	413	1121315	31	4.94936	trChip_vs_input_peak_3665
scaffold_396	883411	883994	584	883567	31	4.94936	trChip_vs_input_peak_3833
scaffold_42	1151306	1152003	698	1151711	31	4.94936	trChip_vs_input_peak_4074
scaffold_48	2019375	2020020	646	2019758	31	4.94936	trChip_vs_input_peak_4520
scaffold_717	364337	364783	447	364510	31	4.94936	trChip_vs_input_peak_5820
scaffold_74	182110	182842	733	182377	31	4.94936	trChip_vs_input_peak_5906
scaffold_93	829486	830618	1133	830074	31	4.94936	trChip_vs_input_peak_6596
scaffold_130	2073056	2074347	1292	2074237	34	4.94856	trChip_vs_input_peak_758
scaffold_139	187901	188475	575	188269	34	4.94856	trChip_vs_input_peak_891

scaffold_189	1872197	1873656	1460	1873097	34	4.94856	trChip_vs_input_peak_1592
scaffold_380	677623	678324	702	678109	34	4.94856	trChip_vs_input_peak_3729
scaffold_461	47113	47476	364	47314	34	4.94856	trChip_vs_input_peak_4367
scaffold_5610	6273	6577	305	6391	34	4.94856	trChip_vs_input_peak_5010
scaffold_826	250497	251053	557	250825	34	4.94856	trChip_vs_input_peak_6270
scaffold_109	1487556	1487946	391	1487775	37	4.94789	trChip_vs_input_peak_306
scaffold_120	2445639	2446023	385	2445801	37	4.94789	trChip_vs_input_peak_570
scaffold_430	749038	749562	525	749199	37	4.94789	trChip_vs_input_peak_4174
scaffold_950	179265	179593	329	179432	37	4.94789	trChip_vs_input_peak_6641
scaffold_180	957522	958130	609	957845	40	4.94732	trChip_vs_input_peak_1517
scaffold_230	930395	931546	1152	930577	40	4.94732	trChip_vs_input_peak_2109
scaffold_26	2163589	2164219	631	2163822	40	4.94732	trChip_vs_input_peak_2404
scaffold_396	725959	726366	408	726140	40	4.94732	trChip_vs_input_peak_3829
scaffold_248	782229	782707	479	782452	43	4.94683	trChip_vs_input_peak_2275
scaffold_289	1434738	1435168	431	1435014	43	4.94683	trChip_vs_input_peak_2783
scaffold_552	401474	402117	644	401625	43	4.94683	trChip_vs_input_peak_4959
scaffold_604	342898	343581	684	343310	43	4.94683	trChip_vs_input_peak_5243
scaffold_620	334676	335181	506	334895	43	4.94683	trChip_vs_input_peak_5313
scaffold_512	454345	454702	358	454472	46	4.9464	trChip_vs_input_peak_4745
scaffold_23	2880736	2881112	377	2880966	49	4.94602	trChip_vs_input_peak_2095
scaffold_26	3939885	3940386	502	3940094	49	4.94602	trChip_vs_input_peak_2411
scaffold_403	477996	478791	796	478250	49	4.94602	trChip_vs_input_peak_3936
scaffold_218	1115471	1115917	447	1115725	52	4.94568	trChip_vs_input_peak_1923
scaffold_303	1137122	1137873	752	1137541	52	4.94568	trChip_vs_input_peak_2976
scaffold_31	3023743	3024088	346	3023945	52	4.94568	trChip_vs_input_peak_3037
scaffold_989	29482	29995	514	29714	52	4.94568	trChip_vs_input_peak_6726
scaffold_487	167603	168047	445	167830	35	4.94558	trChip_vs_input_peak_4552
scaffold_602	262708	263322	615	263042	35	4.94558	trChip_vs_input_peak_5236
scaffold_142	1370895	1372485	1591	1371254	55	4.94538	trChip_vs_input_peak_942
scaffold_807	38467	39017	551	38791	55	4.94538	trChip_vs_input_peak_6195
scaffold_1298	6741	7019	279	6896	23	4.94523	trChip_vs_input_peak_723
scaffold_38	1046948	1047293	346	1047070	23	4.94523	trChip_vs_input_peak_3697
scaffold_223	1337	1850	514	1691	42	4.93893	trChip_vs_input_peak_2019
scaffold_140	100685	101080	396	100862	30	4.9361	trChip_vs_input_peak_923
scaffold_410	330872	331290	419	331067	30	4.9361	trChip_vs_input_peak_3993
scaffold_531	365717	366234	518	365901	30	4.9361	trChip_vs_input_peak_4844
scaffold_76	969079	969504	426	969272	37	4.93035	trChip_vs_input_peak_5964
scaffold_34	1069560	1069862	303	1069765	18	4.92969	trChip_vs_input_peak_3315
scaffold_53	2513603	2514919	1317	2514272	27	4.92881	trChip_vs_input_peak_4838
scaffold_141	392018	392325	308	392189	25	4.92303	trChip_vs_input_peak_933

scaffold_164	1428824	1429122	299	1428920	25	4.92303	trChip_vs_input_peak_1279
scaffold_210	1496012	1496731	720	1496368	25	4.92303	trChip_vs_input_peak_1860
scaffold_611	203514	203890	377	203712	25	4.92303	trChip_vs_input_peak_5271
scaffold_129	1245103	1245669	567	1245296	32	4.91921	trChip_vs_input_peak_716
scaffold_286	576711	577025	315	576918	32	4.91921	trChip_vs_input_peak_2745
scaffold_752	68468	68916	449	68691	32	4.91921	trChip_vs_input_peak_5950
scaffold_777	175553	176287	735	176041	32	4.91921	trChip_vs_input_peak_6068
scaffold_507	473419	474118	700	473696	39	4.91673	trChip_vs_input_peak_4715
scaffold_400	430620	431760	1141	431601	23	4.91631	trChip_vs_input_peak_3912
scaffold_280	275548	276165	618	275763	34	4.90435	trChip_vs_input_peak_2670
scaffold_12	1985262	1985508	247	1985435	27	4.90417	trChip_vs_input_peak_541
scaffold_76	2627718	2628181	464	2628009	27	4.90417	trChip_vs_input_peak_5989
scaffold_393	51068	51579	512	51242	20	4.90388	trChip_vs_input_peak_3810
scaffold_933	69211	69456	246	69360	20	4.90388	trChip_vs_input_peak_6607
scaffold_25	3043892	3044126	235	3044047	13	4.90329	trChip_vs_input_peak_2300
scaffold_28	3761983	3762228	246	3762165	13	4.90329	trChip_vs_input_peak_2661
scaffold_892	257354	257669	316	257533	13	4.90329	trChip_vs_input_peak_6484
scaffold_232	1358445	1358748	304	1358571	18	4.89345	trChip_vs_input_peak_2133
scaffold_160	1488356	1489243	888	1488760	36	4.89117	trChip_vs_input_peak_1242
scaffold_248	762674	763490	817	763174	36	4.89117	trChip_vs_input_peak_2274
scaffold_294	1037616	1037951	336	1037734	36	4.89117	trChip_vs_input_peak_2822
scaffold_1606	45183	45490	308	45323	29	4.88794	trChip_vs_input_peak_1248
scaffold_77	1811163	1812244	1082	1811360	29	4.88794	trChip_vs_input_peak_6029
scaffold_117	1587387	1587690	304	1587501	22	4.88275	trChip_vs_input_peak_489
scaffold_2	4494705	4495550	846	4494913	38	4.8794	trChip_vs_input_peak_1709
scaffold_3	528428	528890	463	528773	38	4.8794	trChip_vs_input_peak_2869
scaffold_109	696015	696320	306	696154	31	4.87383	trChip_vs_input_peak_295
scaffold_8	707476	708006	531	707620	31	4.87383	trChip_vs_input_peak_6152
scaffold_235	1513265	1513540	276	1513383	15	4.87306	trChip_vs_input_peak_2149
scaffold_3248	8950	9460	511	9136	40	4.86883	trChip_vs_input_peak_3166
scaffold_12	3819307	3819978	672	3819758	63	4.86858	trChip_vs_input_peak_553
scaffold_1	2622463	2622773	311	2622588	24	4.86515	trChip_vs_input_peak_15
scaffold_42	625834	626089	256	625907	24	4.86515	trChip_vs_input_peak_4070
scaffold_29	1544018	1544442	425	1544217	33	4.86144	trChip_vs_input_peak_2787
scaffold_39	1272524	1273010	487	1272691	42	4.85928	trChip_vs_input_peak_3789
scaffold_155	1389842	1390369	528	1390120	54	4.85707	trChip_vs_input_peak_1150
scaffold_410	164021	164821	801	164248	51	4.85237	trChip_vs_input_peak_3991
scaffold_158	1077920	1078508	589	1078375	26	4.85026	trChip_vs_input_peak_1186
scaffold_1736	32831	33157	327	33037	26	4.85026	trChip_vs_input_peak_1399
scaffold_199	1834676	1835361	686	1835156	26	4.85026	trChip_vs_input_peak_1685

scaffold_246	887606	888057	452	887787	26	4.85026	trChip_vs_input_peak_2254
scaffold_279	449667	450106	440	449900	26	4.85026	trChip_vs_input_peak_2624
scaffold_384	331300	331606	307	331486	26	4.85026	trChip_vs_input_peak_3755
scaffold_483	22334	22568	235	22457	26	4.85026	trChip_vs_input_peak_4535
scaffold_537	24577	24906	330	24700	26	4.85026	trChip_vs_input_peak_4864
scaffold_796	261427	261686	260	261566	26	4.85026	trChip_vs_input_peak_6145
scaffold_277	485311	485649	339	485430	17	4.84981	trChip_vs_input_peak_2600
scaffold_570	632044	632370	327	632186	17	4.84981	trChip_vs_input_peak_5053
scaffold_132	72804	73247	444	73021	48	4.8471	trChip_vs_input_peak_778
scaffold_488	829981	830433	453	830215	48	4.8471	trChip_vs_input_peak_4559
scaffold_49	3299932	3300373	442	3300163	48	4.8471	trChip_vs_input_peak_4591
scaffold_539	44467	45186	720	44859	37	4.84072	trChip_vs_input_peak_4870
scaffold_145	607521	607937	417	607709	28	4.83749	trChip_vs_input_peak_983
scaffold_218	1715495	1715762	268	1715619	28	4.83749	trChip_vs_input_peak_1927
scaffold_220	1457715	1458431	717	1457961	28	4.83749	trChip_vs_input_peak_1990
scaffold_364	98655	98967	313	98763	28	4.83749	trChip_vs_input_peak_3517
scaffold_792	308604	308855	252	308759	28	4.83749	trChip_vs_input_peak_6134
scaffold_31	3925857	3926651	795	3926414	42	4.8344	trChip_vs_input_peak_3050
scaffold_49	3661442	3661980	539	3661579	42	4.8344	trChip_vs_input_peak_4595
scaffold_560	346298	348861	2564	346716	42	4.8344	trChip_vs_input_peak_4988
scaffold_84	2767621	2768309	689	2768098	42	4.8344	trChip_vs_input_peak_6331
scaffold_671	436075	436359	285	436220	25	4.83164	trChip_vs_input_peak_5580
scaffold_404	603952	604282	331	604158	21	4.83147	trChip_vs_input_peak_3941
scaffold_17	2944673	2945090	418	2944902	19	4.83137	trChip_vs_input_peak_1349
scaffold_341	400723	401016	294	400835	19	4.83137	trChip_vs_input_peak_3344
scaffold_50	657681	657971	291	657862	19	4.83137	trChip_vs_input_peak_4658
scaffold_50	3107624	3107923	300	3107830	19	4.83137	trChip_vs_input_peak_4666
scaffold_515	339181	339881	701	339370	19	4.83137	trChip_vs_input_peak_4755
scaffold_224	1316131	1316779	649	1316497	39	4.82666	trChip_vs_input_peak_2035
scaffold_2359	13825	14177	353	13990	39	4.82666	trChip_vs_input_peak_2151
scaffold_250	1576796	1578987	2192	1577498	39	4.82666	trChip_vs_input_peak_2322
scaffold_27	2228217	2228801	585	2228548	39	4.82666	trChip_vs_input_peak_2533
scaffold_312	499385	499686	302	499592	39	4.82666	trChip_vs_input_peak_3077
scaffold_327	234521	235718	1198	235486	39	4.82666	trChip_vs_input_peak_3192
scaffold_67	108190	108918	729	108782	39	4.82666	trChip_vs_input_peak_5538
scaffold_692	36194	36761	568	36551	39	4.82666	trChip_vs_input_peak_5694
scaffold_760	111454	111724	271	111601	39	4.82666	trChip_vs_input_peak_5999
scaffold_41	2690629	2691139	511	2690956	30	4.82642	trChip_vs_input_peak_3984
scaffold_52	2502815	2503282	468	2503035	30	4.82642	trChip_vs_input_peak_4791
scaffold_99	936200	936529	330	936359	18	4.82255	trChip_vs_input_peak_6735

scaffold_102	204476	204911	436	204699	36	4.81769	trChip_vs_input_peak_118
scaffold_153	1811680	1812241	562	1812021	36	4.81769	trChip_vs_input_peak_1107
scaffold_227	572799	573457	659	573262	36	4.81769	trChip_vs_input_peak_2061
scaffold_244	760492	760956	465	760724	36	4.81769	trChip_vs_input_peak_2225
scaffold_31	115747	116076	330	115850	36	4.81769	trChip_vs_input_peak_3018
scaffold_444	669330	669845	516	669656	36	4.81769	trChip_vs_input_peak_4258
scaffold_49	3268528	3268996	469	3268740	36	4.81769	trChip_vs_input_peak_4589
scaffold_618	145669	146126	458	145893	36	4.81769	trChip_vs_input_peak_5295
scaffold_9	4692064	4692307	244	4692177	36	4.81769	trChip_vs_input_peak_6497
scaffold_94	29814	30303	490	30074	36	4.81769	trChip_vs_input_peak_6613
scaffold_717	69164	69543	380	69314	43	4.81692	trChip_vs_input_peak_5816
scaffold_189	120842	121136	295	120966	32	4.81674	trChip_vs_input_peak_1579
scaffold_22	3522109	3522655	547	3522452	32	4.81674	trChip_vs_input_peak_1970
scaffold_26	371411	371742	332	371568	32	4.81674	trChip_vs_input_peak_2398
scaffold_105	1689038	1689606	569	1689259	21	4.81638	trChip_vs_input_peak_172
scaffold_255	1110442	1110770	329	1110590	21	4.81638	trChip_vs_input_peak_2361
scaffold_68	1519334	1519573	240	1519509	21	4.81638	trChip_vs_input_peak_5616
scaffold_232	1259562	1259827	266	1259735	19	4.81477	trChip_vs_input_peak_2128
scaffold_12	4814040	4814457	418	4814250	33	4.80718	trChip_vs_input_peak_556
scaffold_136	1472361	1472767	407	1472548	33	4.80718	trChip_vs_input_peak_856
scaffold_16	824350	825217	868	824689	33	4.80718	trChip_vs_input_peak_1214
scaffold_17	1476765	1477367	603	1477008	33	4.80718	trChip_vs_input_peak_1342
scaffold_222	632572	633024	453	632795	33	4.80718	trChip_vs_input_peak_2009
scaffold_263	1165743	1166058	316	1165899	33	4.80718	trChip_vs_input_peak_2451
scaffold_36	1003682	1003947	266	1003826	33	4.80718	trChip_vs_input_peak_3487
scaffold_49	1903860	1904301	442	1904081	33	4.80718	trChip_vs_input_peak_4577
scaffold_598	173602	174105	504	173814	33	4.80718	trChip_vs_input_peak_5183
scaffold_7	2693167	2694090	924	2693870	33	4.80718	trChip_vs_input_peak_5729
scaffold_80	2219506	2220204	699	2219701	33	4.80718	trChip_vs_input_peak_6183
scaffold_89	1534362	1535166	805	1534747	33	4.80718	trChip_vs_input_peak_6475
scaffold_175	1323798	1324349	552	1323995	23	4.80396	trChip_vs_input_peak_1433
scaffold_25	768458	768730	273	768557	23	4.80396	trChip_vs_input_peak_2290
scaffold_27	362035	362369	335	362159	23	4.80396	trChip_vs_input_peak_2506
scaffold_336	763046	763450	405	763156	23	4.80396	trChip_vs_input_peak_3273
scaffold_474	452865	453220	356	453017	23	4.80396	trChip_vs_input_peak_4459
scaffold_829	326042	326316	275	326125	23	4.80396	trChip_vs_input_peak_6286
scaffold_49	2313858	2314392	535	2314174	49	4.79899	trChip_vs_input_peak_4582
scaffold_1008	62545	62969	425	62736	30	4.79469	trChip_vs_input_peak_79
scaffold_109	1460234	1460885	652	1460587	30	4.79469	trChip_vs_input_peak_304
scaffold_133	2014030	2014453	424	2014244	30	4.79469	trChip_vs_input_peak_802

scaffold_1384	7117	7392	276	7300	30	4.79469	trChip_vs_input_peak_884
scaffold_257	761349	761912	564	761559	30	4.79469	trChip_vs_input_peak_2383
scaffold_29	4218852	4219258	407	4219073	30	4.79469	trChip_vs_input_peak_2799
scaffold_345	525067	525480	414	525322	30	4.79469	trChip_vs_input_peak_3367
scaffold_49	2011903	2012378	476	2012180	30	4.79469	trChip_vs_input_peak_4579
scaffold_5039	7156	7420	265	7296	30	4.79469	trChip_vs_input_peak_4697
scaffold_622	399152	399435	284	399308	30	4.79469	trChip_vs_input_peak_5320
scaffold_650	325798	326097	300	325990	30	4.79469	trChip_vs_input_peak_5466
scaffold_679	391397	391780	384	391611	30	4.79469	trChip_vs_input_peak_5608
scaffold_760	70275	70530	256	70368	30	4.79469	trChip_vs_input_peak_5998
scaffold_116	1219165	1219434	270	1219262	25	4.79351	trChip_vs_input_peak_472
scaffold_243	1004590	1004984	395	1004798	25	4.79351	trChip_vs_input_peak_2212
scaffold_368	134031	134414	384	134241	25	4.79351	trChip_vs_input_peak_3552
scaffold_357	1212571	1212821	251	1212706	12	4.79259	trChip_vs_input_peak_3472
scaffold_679	77701	78244	544	77778	12	4.79259	trChip_vs_input_peak_5604
scaffold_1166	138622	139501	880	139159	40	4.78769	trChip_vs_input_peak_480
scaffold_162	326132	326560	429	326307	27	4.78458	trChip_vs_input_peak_1256
scaffold_175	2057852	2058562	711	2058277	27	4.78458	trChip_vs_input_peak_1437
scaffold_226	990566	991649	1084	991472	27	4.78458	trChip_vs_input_peak_2054
scaffold_376	1118013	1118631	619	1118369	27	4.78458	trChip_vs_input_peak_3664
scaffold_38	1947539	1947924	386	1947771	27	4.78458	trChip_vs_input_peak_3704
scaffold_44	496511	496958	448	496612	27	4.78458	trChip_vs_input_peak_4215
scaffold_808	237891	238923	1033	238494	27	4.78458	trChip_vs_input_peak_6200
scaffold_44	484406	484744	339	484628	22	4.78135	trChip_vs_input_peak_4214
scaffold_124	2000284	2000692	409	2000420	27	4.77962	trChip_vs_input_peak_642
scaffold_125	418510	419412	903	418928	27	4.77962	trChip_vs_input_peak_652
scaffold_241	1585196	1585495	300	1585344	27	4.77962	trChip_vs_input_peak_2202
scaffold_25	4106875	4107128	254	4107020	27	4.77962	trChip_vs_input_peak_2303
scaffold_251	1393278	1393517	240	1393335	27	4.77962	trChip_vs_input_peak_2336
scaffold_263	587761	589058	1298	588532	27	4.77962	trChip_vs_input_peak_2450
scaffold_31	3518642	3519474	833	3519190	27	4.77962	trChip_vs_input_peak_3045
scaffold_371	666862	667385	524	667260	27	4.77962	trChip_vs_input_peak_3615
scaffold_494	846669	846913	245	846833	27	4.77962	trChip_vs_input_peak_4616
scaffold_56	2015198	2015814	617	2015602	27	4.77962	trChip_vs_input_peak_4981
scaffold_62	734760	736004	1245	735609	27	4.77962	trChip_vs_input_peak_5304
scaffold_64	1890470	1891082	613	1890911	27	4.77962	trChip_vs_input_peak_5393
scaffold_667	215351	215624	274	215505	27	4.77962	trChip_vs_input_peak_5530
scaffold_676	249277	249751	475	249502	27	4.77962	trChip_vs_input_peak_5597
scaffold_836	33222	33682	461	33363	27	4.77962	trChip_vs_input_peak_6314
scaffold_19	1673545	1673929	385	1673668	29	4.77687	trChip_vs_input_peak_1601

scaffold_52	2440642	2441173	532	2441063	29	4.77687	trChip_vs_input_peak_4790
scaffold_52	3520994	3522178	1185	3521828	23	4.77667	trChip_vs_input_peak_4794
scaffold_341	479099	479346	248	479312	14	4.77608	trChip_vs_input_peak_3345
scaffold_427	764727	765483	757	765165	31	4.77014	trChip_vs_input_peak_4146
scaffold_78	684107	684549	443	684200	53	4.76876	trChip_vs_input_peak_6071
scaffold_293	855661	856089	429	855924	22	4.76721	trChip_vs_input_peak_2816
scaffold_492	276814	277683	870	277337	33	4.76422	trChip_vs_input_peak_4603
scaffold_1161	105206	105440	235	105360	16	4.76354	trChip_vs_input_peak_479
scaffold_127	1317190	1317431	242	1317227	16	4.76354	trChip_vs_input_peak_690
scaffold_150	1606978	1607212	235	1607151	16	4.76354	trChip_vs_input_peak_1071
scaffold_198	672452	672891	440	672570	16	4.76354	trChip_vs_input_peak_1667
scaffold_1016	193623	194038	416	193830	24	4.76106	trChip_vs_input_peak_110
scaffold_1206	105393	105811	419	105593	24	4.76106	trChip_vs_input_peak_574
scaffold_123	1837493	1837928	436	1837681	24	4.76106	trChip_vs_input_peak_623
scaffold_184	585681	586055	375	585825	24	4.76106	trChip_vs_input_peak_1544
scaffold_397	126717	127043	327	126890	24	4.76106	trChip_vs_input_peak_3841
scaffold_461	761066	761337	272	761260	24	4.76106	trChip_vs_input_peak_4372
scaffold_477	243123	243644	522	243340	24	4.76106	trChip_vs_input_peak_4491
scaffold_97	537182	537446	265	537300	24	4.76106	trChip_vs_input_peak_6690
scaffold_99	2560528	2560780	253	2560669	24	4.76106	trChip_vs_input_peak_6742
scaffold_80	616361	616627	267	616432	13	4.76052	trChip_vs_input_peak_6175
scaffold_197	1602803	1603511	709	1603223	50	4.75905	trChip_vs_input_peak_1658
scaffold_6228	3237	3581	345	3435	50	4.75905	trChip_vs_input_peak_5321
scaffold_276	10581	10982	402	10806	35	4.75898	trChip_vs_input_peak_2589
scaffold_376	465289	466029	741	465501	35	4.75898	trChip_vs_input_peak_3651
scaffold_402	459018	460703	1686	460094	35	4.75898	trChip_vs_input_peak_3930
scaffold_78	2411127	2411554	428	2411339	37	4.75429	trChip_vs_input_peak_6075
scaffold_1057	126799	127138	340	126918	18	4.75368	trChip_vs_input_peak_194
scaffold_474	453398	453678	281	453563	18	4.75368	trChip_vs_input_peak_4460
scaffold_126	827129	827474	346	827347	15	4.74921	trChip_vs_input_peak_671
scaffold_233	286928	287179	252	287020	15	4.74921	trChip_vs_input_peak_2137
scaffold_174	1755763	1756411	649	1756143	47	4.74818	trChip_vs_input_peak_1422
scaffold_440	366213	366755	543	366397	47	4.74818	trChip_vs_input_peak_4242
scaffold_202	448004	448873	870	448382	41	4.74628	trChip_vs_input_peak_1758
scaffold_461	889209	889580	372	889379	41	4.74628	trChip_vs_input_peak_4375
scaffold_614	385446	385945	500	385632	41	4.74628	trChip_vs_input_peak_5278
scaffold_412	410216	410604	389	410420	20	4.74572	trChip_vs_input_peak_4015
scaffold_91	264918	265227	310	265051	20	4.74572	trChip_vs_input_peak_6534
scaffold_1	984748	985390	643	985201	43	4.74283	trChip_vs_input_peak_5
scaffold_284	1058345	1058634	290	1058565	17	4.74044	trChip_vs_input_peak_2725

scaffold_102	1736234	1736889	656	1736759	22	4.73917	trChip_vs_input_peak_123
scaffold_1126	43551	43785	235	43644	22	4.73917	trChip_vs_input_peak_413
scaffold_1141	110063	110356	294	110193	22	4.73917	trChip_vs_input_peak_449
scaffold_1801	50994	51321	328	51140	22	4.73917	trChip_vs_input_peak_1524
scaffold_348	868779	869152	374	868958	22	4.73917	trChip_vs_input_peak_3379
scaffold_501	405621	405860	240	405705	22	4.73917	trChip_vs_input_peak_4674
scaffold_7	5450197	5450431	235	5450282	22	4.73917	trChip_vs_input_peak_5745
scaffold_9557	6165	6417	253	6329	22	4.73917	trChip_vs_input_peak_6654
scaffold_1210	93351	93684	334	93432	21	4.73765	trChip_vs_input_peak_582
scaffold_125	421026	421464	439	421241	21	4.73765	trChip_vs_input_peak_653
scaffold_225	815026	815393	368	815180	21	4.73765	trChip_vs_input_peak_2041
scaffold_273	1443836	1444099	264	1443962	21	4.73765	trChip_vs_input_peak_2577
scaffold_277	339970	340291	322	340076	21	4.73765	trChip_vs_input_peak_2597
scaffold_289	383920	384320	401	384109	21	4.73765	trChip_vs_input_peak_2763
scaffold_416	538958	539295	338	539100	21	4.73765	trChip_vs_input_peak_4043
scaffold_4740	7256	7577	322	7426	21	4.73765	trChip_vs_input_peak_4469
scaffold_523	96861	97210	350	96979	21	4.73765	trChip_vs_input_peak_4804
scaffold_930	76065	76554	490	76234	21	4.73765	trChip_vs_input_peak_6601
scaffold_272	628535	628769	235	628735	13	4.73753	trChip_vs_input_peak_2563
scaffold_328	419956	420190	235	420006	13	4.73753	trChip_vs_input_peak_3202
scaffold_45	2634780	2635190	411	2634960	44	4.73591	trChip_vs_input_peak_4312
scaffold_125	1689568	1690032	465	1689795	24	4.73369	trChip_vs_input_peak_661
scaffold_175	206282	206553	272	206370	24	4.73369	trChip_vs_input_peak_1428
scaffold_219	1111707	1112090	384	1111965	24	4.73369	trChip_vs_input_peak_1936
scaffold_252	698434	698720	287	698625	24	4.73369	trChip_vs_input_peak_2347
scaffold_300	1330240	1330715	476	1330504	24	4.73369	trChip_vs_input_peak_2955
scaffold_348	868074	868647	574	868281	24	4.73369	trChip_vs_input_peak_3378
scaffold_635	429264	429614	351	429427	24	4.73369	trChip_vs_input_peak_5361
scaffold_37	1847804	1848259	456	1847993	19	4.73346	trChip_vs_input_peak_3583
scaffold_480	70282	70572	291	70474	20	4.73047	trChip_vs_input_peak_4524
scaffold_166	1703768	1704123	356	1703914	26	4.72902	trChip_vs_input_peak_1300
scaffold_282	1374464	1374923	460	1374660	26	4.72902	trChip_vs_input_peak_2710
scaffold_77	3071056	3071391	336	3071227	26	4.72902	trChip_vs_input_peak_6049
scaffold_345	551192	551493	302	551289	28	4.72501	trChip_vs_input_peak_3369
scaffold_645	241756	242311	556	242144	28	4.72501	trChip_vs_input_peak_5411
scaffold_87	2728177	2728636	460	2728357	28	4.72501	trChip_vs_input_peak_6422
scaffold_171	682682	683068	387	682922	41	4.72197	trChip_vs_input_peak_1370
scaffold_275	412529	413119	591	412724	41	4.72197	trChip_vs_input_peak_2585
scaffold_910	193863	194498	636	194205	41	4.72197	trChip_vs_input_peak_6550
scaffold_124	144047	144478	432	144276	30	4.72152	trChip_vs_input_peak_637

scaffold_341	997202	997566	365	997455	30	4.72152	trChip_vs_input_peak_3348
scaffold_382	1144185	1144460	276	1144364	30	4.72152	trChip_vs_input_peak_3746
scaffold_827	327331	327646	316	327470	30	4.72152	trChip_vs_input_peak_6278
scaffold_52	81684	81984	301	81833	18	4.71997	trChip_vs_input_peak_4783
scaffold_327	634221	634738	518	634394	32	4.71846	trChip_vs_input_peak_3196
scaffold_244	1386823	1387268	446	1387003	61	4.71644	trChip_vs_input_peak_2230
scaffold_32	2800931	2801250	320	2801097	34	4.71575	trChip_vs_input_peak_3129
scaffold_326	1054391	1054941	551	1054647	36	4.71333	trChip_vs_input_peak_3189
scaffold_339	740083	740517	435	740367	36	4.71333	trChip_vs_input_peak_3302
scaffold_71	496421	497058	638	496678	36	4.71333	trChip_vs_input_peak_5796
scaffold_27	567173	567872	700	567671	38	4.71117	trChip_vs_input_peak_2507
scaffold_673	192649	193066	418	192848	40	4.70922	trChip_vs_input_peak_5589
scaffold_1275	58285	58681	397	58492	18	4.70719	trChip_vs_input_peak_694
scaffold_15	2960467	2960753	287	2960633	18	4.70719	trChip_vs_input_peak_1062
scaffold_224	1182436	1182750	315	1182608	18	4.70719	trChip_vs_input_peak_2033
scaffold_333	1327082	1327437	356	1327238	18	4.70719	trChip_vs_input_peak_3250
scaffold_338	1158542	1158776	235	1158658	18	4.70719	trChip_vs_input_peak_3289
scaffold_367	787511	788031	521	787709	18	4.70719	trChip_vs_input_peak_3547
scaffold_405	717476	717750	275	717633	18	4.70719	trChip_vs_input_peak_3947
scaffold_515	133829	134080	252	133985	18	4.70719	trChip_vs_input_peak_4748
scaffold_581	249348	249694	347	249521	18	4.70719	trChip_vs_input_peak_5109
scaffold_664	107037	107400	364	107230	18	4.70719	trChip_vs_input_peak_5517
scaffold_698	281075	281318	244	281168	18	4.70719	trChip_vs_input_peak_5712
scaffold_77	3036315	3036552	238	3036432	18	4.70719	trChip_vs_input_peak_6042
scaffold_770	129830	130070	241	129942	18	4.70719	trChip_vs_input_peak_6054
scaffold_83	1066174	1066426	253	1066390	18	4.70719	trChip_vs_input_peak_6290
scaffold_101	1232548	1232996	449	1232776	38	4.70599	trChip_vs_input_peak_89
scaffold_1287	39164	39681	518	39393	38	4.70599	trChip_vs_input_peak_709
scaffold_331	1076654	1076930	277	1076774	38	4.70599	trChip_vs_input_peak_3234
scaffold_332	813707	814355	649	813889	38	4.70599	trChip_vs_input_peak_3237
scaffold_390	52444	52803	360	52617	38	4.70599	trChip_vs_input_peak_3797
scaffold_91	1677710	1678649	940	1678444	38	4.70599	trChip_vs_input_peak_6542
scaffold_31	1346640	1347538	899	1346854	44	4.70584	trChip_vs_input_peak_3026
scaffold_507	344755	345046	292	344886	17	4.70508	trChip_vs_input_peak_4713
scaffold_64	508727	508961	235	508894	18	4.7033	trChip_vs_input_peak_5378
scaffold_7	722679	723364	686	722936	55	4.69367	trChip_vs_input_peak_5722
scaffold_326	1052431	1054318	1888	1053072	31	4.69032	trChip_vs_input_peak_3188
scaffold_368	301404	301638	235	301562	11	4.68984	trChip_vs_input_peak_3554
scaffold_430	462865	463099	235	463011	11	4.68984	trChip_vs_input_peak_4173
scaffold_556	580517	580903	387	580670	11	4.68984	trChip_vs_input_peak_4970

scaffold_650	570402	570647	246	570453	11	4.68984	trChip_vs_input_peak_5469
scaffold_916	62149	62402	254	62191	11	4.68984	trChip_vs_input_peak_6560
scaffold_38	360297	360570	274	360349	16	4.68854	trChip_vs_input_peak_3686
scaffold_366	489454	490775	1322	490052	35	4.68748	trChip_vs_input_peak_3529
scaffold_372	812886	813265	380	813103	35	4.68748	trChip_vs_input_peak_3625
scaffold_40	946623	947084	462	946741	35	4.68748	trChip_vs_input_peak_3899
scaffold_417	341719	342105	387	341904	35	4.68748	trChip_vs_input_peak_4049
scaffold_44	17355	17691	337	17502	35	4.68748	trChip_vs_input_peak_4210
scaffold_519	471603	472009	407	471806	35	4.68748	trChip_vs_input_peak_4781
scaffold_55	329117	330215	1099	329288	35	4.68748	trChip_vs_input_peak_4938
scaffold_7	354524	355178	655	354857	35	4.68748	trChip_vs_input_peak_5717
scaffold_475	401135	402549	1415	402146	52	4.68045	trChip_vs_input_peak_4471
scaffold_940	23170	23634	465	23414	52	4.68045	trChip_vs_input_peak_6625
scaffold_416	77423	78142	720	77934	35	4.67086	trChip_vs_input_peak_4035
scaffold_586	514325	514749	425	514591	35	4.67086	trChip_vs_input_peak_5132
scaffold_109	1461032	1461551	520	1461225	33	4.67082	trChip_vs_input_peak_305
scaffold_149	1724844	1725443	600	1725213	33	4.67082	trChip_vs_input_peak_1046
scaffold_318	226897	227896	1000	227120	33	4.67082	trChip_vs_input_peak_3107
scaffold_207	164893	165616	724	165088	31	4.67078	trChip_vs_input_peak_1807
scaffold_301	348574	349017	444	348879	31	4.67078	trChip_vs_input_peak_2958
scaffold_134	740250	740843	594	740641	29	4.67073	trChip_vs_input_peak_811
scaffold_16	1442471	1442831	361	1442655	27	4.67068	trChip_vs_input_peak_1220
scaffold_18	4323439	4323979	541	4323899	27	4.67068	trChip_vs_input_peak_1510
scaffold_330	1303704	1304080	377	1303897	27	4.67068	trChip_vs_input_peak_3231
scaffold_335	97080	97463	384	97291	27	4.67068	trChip_vs_input_peak_3261
scaffold_35	121102	121351	250	121202	27	4.67068	trChip_vs_input_peak_3385
scaffold_506	185726	186607	882	186229	27	4.67068	trChip_vs_input_peak_4706
scaffold_722	281757	282091	335	281914	27	4.67068	trChip_vs_input_peak_5847
scaffold_35	1424312	1424749	438	1424579	26	4.67065	trChip_vs_input_peak_3394
scaffold_30	2274244	2274703	460	2274473	25	4.67062	trChip_vs_input_peak_2936
scaffold_320	1262936	1263808	873	1263091	25	4.67062	trChip_vs_input_peak_3137
scaffold_35	2129893	2130172	280	2129975	25	4.67062	trChip_vs_input_peak_3406
scaffold_487	569313	569664	352	569534	25	4.67062	trChip_vs_input_peak_4553
scaffold_143	2222159	2222407	249	2222238	21	4.67046	trChip_vs_input_peak_960
scaffold_33	2717616	2717876	261	2717730	21	4.67046	trChip_vs_input_peak_3216
scaffold_34	3404295	3404767	473	3404612	21	4.67046	trChip_vs_input_peak_3328
scaffold_508	787545	787987	443	787758	21	4.67046	trChip_vs_input_peak_4721
scaffold_517	111761	112030	270	111928	21	4.67046	trChip_vs_input_peak_4773
scaffold_561	259202	259798	597	259674	21	4.67046	trChip_vs_input_peak_5009
scaffold_63	3264801	3265050	250	3264956	21	4.67046	trChip_vs_input_peak_5348

scaffold_69	437678	438013	336	437906	21	4.67046	trChip_vs_input_peak_5657
scaffold_296	1468434	1468733	300	1468546	19	4.67036	trChip_vs_input_peak_2847
scaffold_671	297331	297616	286	297438	19	4.67036	trChip_vs_input_peak_5578
scaffold_176	20710	20999	290	20819	18	4.6703	trChip_vs_input_peak_1443
scaffold_1611	42316	42711	396	42482	17	4.67023	trChip_vs_input_peak_1253
scaffold_58	395916	396169	254	396037	17	4.67023	trChip_vs_input_peak_5082
scaffold_226	603028	603262	235	603121	15	4.67008	trChip_vs_input_peak_2050
scaffold_297	1301344	1301617	274	1301570	15	4.67008	trChip_vs_input_peak_2852
scaffold_441	710846	711080	235	710971	15	4.67008	trChip_vs_input_peak_4251
scaffold_63	1553528	1553883	356	1553687	15	4.67008	trChip_vs_input_peak_5340
scaffold_676	202967	203301	335	203129	15	4.67008	trChip_vs_input_peak_5596
scaffold_1423	75637	75880	244	75737	13	4.66988	trChip_vs_input_peak_947
scaffold_164	1747583	1747817	235	1747636	11	4.66961	trChip_vs_input_peak_1280
scaffold_73	1301559	1301838	280	1301665	11	4.66961	trChip_vs_input_peak_5880
scaffold_3	1918769	1919041	273	1918876	15	4.66594	trChip_vs_input_peak_2879
scaffold_650	225705	226013	309	225926	15	4.66594	trChip_vs_input_peak_5464
scaffold_93	2719869	2720303	435	2720033	15	4.66594	trChip_vs_input_peak_6599
scaffold_99	663475	663717	243	663677	15	4.66594	trChip_vs_input_peak_6732
scaffold_99	1825453	1825832	380	1825537	15	4.66594	trChip_vs_input_peak_6737
scaffold_990	227477	227717	241	227628	15	4.66594	trChip_vs_input_peak_6746
scaffold_101	831078	831452	375	831252	32	4.66579	trChip_vs_input_peak_83
scaffold_1059	3924	4476	553	4244	32	4.66579	trChip_vs_input_peak_196
scaffold_114	1534562	1535010	449	1534882	32	4.66579	trChip_vs_input_peak_444
scaffold_27	1134939	1135209	271	1135104	32	4.66579	trChip_vs_input_peak_2515
scaffold_408	1072920	1073478	559	1073323	32	4.66579	trChip_vs_input_peak_3963
scaffold_41	3313202	3313493	292	3313362	32	4.66579	trChip_vs_input_peak_3987
scaffold_437	382766	383282	517	382996	32	4.66579	trChip_vs_input_peak_4200
scaffold_448	423888	424284	397	424072	32	4.66579	trChip_vs_input_peak_4281
scaffold_5966	440	848	409	666	32	4.66579	trChip_vs_input_peak_5176
scaffold_607	117141	117385	245	117254	32	4.66579	trChip_vs_input_peak_5254
scaffold_65	366071	366350	280	366129	32	4.66579	trChip_vs_input_peak_5448
scaffold_76	2543275	2544118	844	2543759	32	4.66579	trChip_vs_input_peak_5978
scaffold_79	2510586	2510869	284	2510724	32	4.66579	trChip_vs_input_peak_6121
scaffold_905	95958	96333	376	96081	32	4.66579	trChip_vs_input_peak_6521
scaffold_990	142561	142918	358	142780	32	4.66579	trChip_vs_input_peak_6744
scaffold_163	1308016	1308443	428	1308227	49	4.66574	trChip_vs_input_peak_1270
scaffold_556	62242	62859	618	62606	49	4.66574	trChip_vs_input_peak_4968
scaffold_30	1740696	1740968	273	1740826	15	4.6507	trChip_vs_input_peak_2926
scaffold_175	1917629	1918231	603	1917913	46	4.64926	trChip_vs_input_peak_1436
scaffold_350	1109746	1110438	693	1110192	46	4.64926	trChip_vs_input_peak_3419

scaffold_360	1084124	1084604	481	1084348	46	4.64926	trChip_vs_input_peak_3499
scaffold_506	197180	197503	324	197341	22	4.64359	trChip_vs_input_peak_4709
scaffold_1312	92774	93221	448	92997	29	4.64002	trChip_vs_input_peak_773
scaffold_1501	56197	56663	467	56390	29	4.64002	trChip_vs_input_peak_1075
scaffold_287	345506	345910	405	345693	29	4.64002	trChip_vs_input_peak_2749
scaffold_40	851533	851892	360	851702	29	4.64002	trChip_vs_input_peak_3898
scaffold_44	5469	5749	281	5674	29	4.64002	trChip_vs_input_peak_4209
scaffold_456	592182	592459	278	592336	29	4.64002	trChip_vs_input_peak_4336
scaffold_470	419139	419382	244	419279	29	4.64002	trChip_vs_input_peak_4430
scaffold_562	594493	594879	387	594664	29	4.64002	trChip_vs_input_peak_5014
scaffold_604	13131	13644	514	13327	29	4.64002	trChip_vs_input_peak_5242
scaffold_68	2287794	2288162	369	2287956	29	4.64002	trChip_vs_input_peak_5623
scaffold_717	437991	438717	727	438492	29	4.64002	trChip_vs_input_peak_5821
scaffold_725	149557	150564	1008	150295	29	4.64002	trChip_vs_input_peak_5857
scaffold_88	2687501	2687917	417	2687708	29	4.64002	trChip_vs_input_peak_6455
scaffold_96	1982022	1982401	380	1982232	29	4.64002	trChip_vs_input_peak_6677
scaffold_111	1265156	1266763	1608	1265434	38	4.63133	trChip_vs_input_peak_379
scaffold_229	1266926	1267285	360	1267078	43	4.63067	trChip_vs_input_peak_2082
scaffold_69	1244292	1245005	714	1244765	43	4.63067	trChip_vs_input_peak_5673
scaffold_71	812903	814480	1578	814075	43	4.63067	trChip_vs_input_peak_5801
scaffold_76	2633409	2635158	1750	2633898	43	4.63067	trChip_vs_input_peak_5991
scaffold_68	1030070	1030377	308	1030209	36	4.62918	trChip_vs_input_peak_5611
scaffold_250	763804	764320	517	764059	34	4.62678	trChip_vs_input_peak_2312
scaffold_267	955088	955659	572	955275	34	4.62678	trChip_vs_input_peak_2484
scaffold_419	1016639	1017107	469	1016771	34	4.62678	trChip_vs_input_peak_4063
scaffold_225	976033	976458	426	976256	57	4.62585	trChip_vs_input_peak_2043
scaffold_442	479719	480891	1173	480072	57	4.62585	trChip_vs_input_peak_4254
scaffold_22	4929457	4929813	357	4929576	32	4.6241	trChip_vs_input_peak_1985
scaffold_3	7234032	7234905	874	7234278	32	4.6241	trChip_vs_input_peak_2906
scaffold_889	88386	88671	286	88510	32	4.6241	trChip_vs_input_peak_6470
scaffold_559	27988	28270	283	28134	30	4.62108	trChip_vs_input_peak_4973
scaffold_159	1255119	1255442	324	1255234	28	4.61764	trChip_vs_input_peak_1205
scaffold_348	869239	869570	332	869372	28	4.61764	trChip_vs_input_peak_3380
scaffold_35	121510	122576	1067	121694	28	4.61764	trChip_vs_input_peak_3386
scaffold_469	663772	664367	596	663923	28	4.61764	trChip_vs_input_peak_4396
scaffold_88	1728280	1729058	779	1728788	28	4.61764	trChip_vs_input_peak_6451
scaffold_1080	209775	210173	399	209988	26	4.6137	trChip_vs_input_peak_272
scaffold_1406	1096	1780	685	1307	26	4.6137	trChip_vs_input_peak_931
scaffold_363	492172	492776	605	492615	26	4.6137	trChip_vs_input_peak_3510
scaffold_540	169863	170137	275	170044	26	4.6137	trChip_vs_input_peak_4889

scaffold_273	943839	944100	262	943960	15	4.61244	trChip_vs_input_peak_2573
scaffold_1447	62726	63098	373	62880	40	4.60954	trChip_vs_input_peak_974
scaffold_177	1495829	1496536	708	1496219	40	4.60954	trChip_vs_input_peak_1461
scaffold_244	1173601	1174020	420	1173806	40	4.60954	trChip_vs_input_peak_2228
scaffold_248	1464817	1465130	314	1464915	40	4.60954	trChip_vs_input_peak_2282
scaffold_1221	123250	123741	492	123475	24	4.60914	trChip_vs_input_peak_611
scaffold_130	1549133	1549695	563	1549360	24	4.60914	trChip_vs_input_peak_752
scaffold_136	1416848	1417132	285	1417033	24	4.60914	trChip_vs_input_peak_855
scaffold_355	180249	180656	408	180459	24	4.60914	trChip_vs_input_peak_3447
scaffold_59	1082243	1082627	385	1082424	24	4.60914	trChip_vs_input_peak_5152
scaffold_645	594042	594402	361	594225	24	4.60914	trChip_vs_input_peak_5416
scaffold_837	274895	275137	243	275027	24	4.60914	trChip_vs_input_peak_6320
scaffold_113	1506336	1506911	576	1506745	26	4.60892	trChip_vs_input_peak_427
scaffold_12	3702285	3703202	918	3702630	26	4.60892	trChip_vs_input_peak_551
scaffold_140	1093787	1094305	519	1094011	26	4.60892	trChip_vs_input_peak_928
scaffold_22	2042081	2042424	344	2042265	26	4.60892	trChip_vs_input_peak_1959
scaffold_245	1418793	1419406	614	1419011	26	4.60892	trChip_vs_input_peak_2241
scaffold_250	1202470	1202800	331	1202640	26	4.60892	trChip_vs_input_peak_2317
scaffold_267	984152	984602	451	984536	26	4.60892	trChip_vs_input_peak_2486
scaffold_27	4220131	4220451	321	4220327	26	4.60892	trChip_vs_input_peak_2546
scaffold_289	436775	437114	340	436943	26	4.60892	trChip_vs_input_peak_2766
scaffold_336	744550	745162	613	744966	26	4.60892	trChip_vs_input_peak_3272
scaffold_49	1939005	1939452	448	1939237	26	4.60892	trChip_vs_input_peak_4578
scaffold_597	20793	21104	312	20878	26	4.60892	trChip_vs_input_peak_5179
scaffold_645	374684	375011	328	374793	26	4.60892	trChip_vs_input_peak_5412
scaffold_646	265758	266568	811	266371	26	4.60892	trChip_vs_input_peak_5420
scaffold_96	1949748	1950256	509	1950122	26	4.60892	trChip_vs_input_peak_6674
scaffold_97	807999	808562	564	808203	26	4.60892	trChip_vs_input_peak_6692
scaffold_99	938179	938766	588	938399	26	4.60892	trChip_vs_input_peak_6736
scaffold_10	2951858	2952092	235	2952024	12	4.60694	trChip_vs_input_peak_56
scaffold_821	96942	97215	274	96982	12	4.60694	trChip_vs_input_peak_6254
scaffold_404	748822	749247	426	748967	13	4.60413	trChip_vs_input_peak_3943
scaffold_399	243104	243398	295	243268	22	4.6038	trChip_vs_input_peak_3860
scaffold_683	503363	503682	320	503563	22	4.6038	trChip_vs_input_peak_5638
scaffold_1050	66952	67274	323	67136	21	4.60077	trChip_vs_input_peak_188
scaffold_1469	56067	56350	284	56216	20	4.59745	trChip_vs_input_peak_1009
scaffold_41	1551593	1551853	261	1551697	20	4.59745	trChip_vs_input_peak_3976
scaffold_549	88916	89449	534	89355	20	4.59745	trChip_vs_input_peak_4930
scaffold_810	36373	36623	251	36495	20	4.59745	trChip_vs_input_peak_6214
scaffold_58	1643832	1644301	470	1644005	39	4.59436	trChip_vs_input_peak_5095

scaffold_273	1388025	1388737	713	1388505	51	4.59214	trChip_vs_input_peak_2576
scaffold_17	2336036	2336395	360	2336207	37	4.59037	trChip_vs_input_peak_1346
scaffold_297	978109	978392	284	978252	18	4.5898	trChip_vs_input_peak_2851
scaffold_690	459822	460056	235	459933	18	4.5898	trChip_vs_input_peak_5690
scaffold_106	2283172	2283520	349	2283353	35	4.58594	trChip_vs_input_peak_215
scaffold_155	2211540	2212116	577	2211770	35	4.58594	trChip_vs_input_peak_1169
scaffold_179	612878	613670	793	613406	35	4.58594	trChip_vs_input_peak_1484
scaffold_108	732035	732459	425	732258	37	4.58532	trChip_vs_input_peak_254
scaffold_2430	17076	17663	588	17294	37	4.58532	trChip_vs_input_peak_2222
scaffold_3	4462812	4463332	521	4462992	37	4.58532	trChip_vs_input_peak_2891
scaffold_353	278403	279278	876	278887	37	4.58532	trChip_vs_input_peak_3433
scaffold_65	1395317	1396546	1230	1395943	37	4.58532	trChip_vs_input_peak_5457
scaffold_80	1043691	1044033	343	1043837	37	4.58532	trChip_vs_input_peak_6176
scaffold_931	90272	90722	451	90495	37	4.58532	trChip_vs_input_peak_6603
scaffold_147	1848353	1849142	790	1848980	33	4.58101	trChip_vs_input_peak_1018
scaffold_163	1224838	1225163	326	1225023	33	4.58101	trChip_vs_input_peak_1269
scaffold_96	986182	986634	453	986401	33	4.58101	trChip_vs_input_peak_6670
scaffold_1180	54829	55234	406	55048	16	4.58037	trChip_vs_input_peak_512
scaffold_232	519825	520086	262	519928	16	4.58037	trChip_vs_input_peak_2124
scaffold_951	213110	213433	324	213263	16	4.58037	trChip_vs_input_peak_6646
scaffold_94	1735067	1735325	259	1735230	22	4.57764	trChip_vs_input_peak_6623
scaffold_184	1674744	1675086	343	1674871	31	4.57547	trChip_vs_input_peak_1548
scaffold_28	1043751	1044442	692	1044283	31	4.57547	trChip_vs_input_peak_2647
scaffold_287	344890	345411	522	345162	31	4.57547	trChip_vs_input_peak_2748
scaffold_37	170597	170915	319	170711	31	4.57547	trChip_vs_input_peak_3568
scaffold_82	450333	450738	406	450565	48	4.57242	trChip_vs_input_peak_6236
scaffold_99	2201974	2202395	422	2202220	48	4.57242	trChip_vs_input_peak_6738
scaffold_1135	19119	19424	306	19203	23	4.57062	trChip_vs_input_peak_438
scaffold_125	1686158	1686885	728	1686578	23	4.57062	trChip_vs_input_peak_659
scaffold_147	1832026	1832350	325	1832169	23	4.57062	trChip_vs_input_peak_1016
scaffold_181	1430823	1431284	462	1431034	23	4.57062	trChip_vs_input_peak_1530
scaffold_232	1257756	1258004	249	1257885	23	4.57062	trChip_vs_input_peak_2127
scaffold_278	1454371	1454664	294	1454497	23	4.57062	trChip_vs_input_peak_2615
scaffold_340	516093	516391	299	516235	23	4.57062	trChip_vs_input_peak_3334
scaffold_352	149264	149776	513	149623	23	4.57062	trChip_vs_input_peak_3425
scaffold_363	202336	202627	292	202470	23	4.57062	trChip_vs_input_peak_3507
scaffold_725	380228	380536	309	380417	23	4.57062	trChip_vs_input_peak_5858
scaffold_730	46427	46984	558	46680	23	4.57062	trChip_vs_input_peak_5883
scaffold_753	29522	29793	272	29588	23	4.57062	trChip_vs_input_peak_5953
scaffold_908	80400	80856	457	80595	23	4.57062	trChip_vs_input_peak_6527

scaffold_158	1178034	1178279	246	1178181	29	4.56921	trChip_vs_input_peak_1191
scaffold_250	605345	605651	307	605475	29	4.56921	trChip_vs_input_peak_2311
scaffold_403	405823	406466	644	406283	29	4.56921	trChip_vs_input_peak_3934
scaffold_536	201535	201931	397	201737	29	4.56921	trChip_vs_input_peak_4862
scaffold_568	548435	548836	402	548640	29	4.56921	trChip_vs_input_peak_5044
scaffold_59	3159859	3160684	826	3160054	23	4.56903	trChip_vs_input_peak_5161
scaffold_195	1318154	1318532	379	1318301	14	4.56849	trChip_vs_input_peak_1644
scaffold_597	463200	463485	286	463269	14	4.56849	trChip_vs_input_peak_5182
scaffold_62	809361	809620	260	809515	14	4.56849	trChip_vs_input_peak_5306
scaffold_113	1770341	1770797	457	1770621	27	4.56208	trChip_vs_input_peak_431
scaffold_28	1927727	1928057	331	1927869	27	4.56208	trChip_vs_input_peak_2653
scaffold_549	650383	650776	394	650573	27	4.56208	trChip_vs_input_peak_4933
scaffold_17	702915	703415	501	703194	34	4.55727	trChip_vs_input_peak_1339
scaffold_220	53882	54292	411	54079	34	4.55727	trChip_vs_input_peak_1986
scaffold_223	428257	429096	840	428494	34	4.55727	trChip_vs_input_peak_2021
scaffold_27	984604	985143	540	984763	34	4.55727	trChip_vs_input_peak_2514
scaffold_288	969523	969821	299	969675	34	4.55727	trChip_vs_input_peak_2758
scaffold_321	1212206	1212614	409	1212404	34	4.55727	trChip_vs_input_peak_3147
scaffold_36	3195240	3195717	478	3195400	34	4.55727	trChip_vs_input_peak_3492
scaffold_42	1625831	1626080	250	1625961	34	4.55727	trChip_vs_input_peak_4080
scaffold_697	352919	353409	491	353086	34	4.55727	trChip_vs_input_peak_5707
scaffold_76	739955	740720	766	740416	34	4.55727	trChip_vs_input_peak_5963
scaffold_792	134472	134877	406	134691	34	4.55727	trChip_vs_input_peak_6129
scaffold_274	1439253	1440522	1270	1439471	25	4.55387	trChip_vs_input_peak_2583
scaffold_94	451985	452493	509	452232	25	4.55387	trChip_vs_input_peak_6616
scaffold_22	585897	586327	431	586063	12	4.55305	trChip_vs_input_peak_1938
scaffold_414	529132	529444	313	529344	12	4.55305	trChip_vs_input_peak_4023
scaffold_77	520183	520435	253	520307	12	4.55305	trChip_vs_input_peak_6022
scaffold_495	647353	648032	680	647748	45	4.55034	trChip_vs_input_peak_4623
scaffold_252	1261294	1261820	527	1261504	36	4.54797	trChip_vs_input_peak_2348
scaffold_260	297342	298080	739	297860	56	4.54609	trChip_vs_input_peak_2414
scaffold_174	399322	399579	258	399435	23	4.54434	trChip_vs_input_peak_1403
scaffold_393	557131	557453	323	557242	23	4.54434	trChip_vs_input_peak_3813
scaffold_49	549958	550253	296	550153	23	4.54434	trChip_vs_input_peak_4570
scaffold_516	542838	543195	358	543101	23	4.54434	trChip_vs_input_peak_4772
scaffold_326	328237	328472	236	328403	17	4.53587	trChip_vs_input_peak_3186
scaffold_246	1467635	1468862	1228	1468339	43	4.5336	trChip_vs_input_peak_2256
scaffold_369	314688	314962	275	314770	21	4.53312	trChip_vs_input_peak_3563
scaffold_470	915573	916005	433	915705	21	4.53312	trChip_vs_input_peak_4435
scaffold_88	799121	799356	236	799239	21	4.53312	trChip_vs_input_peak_6445

scaffold_503	702461	702705	245	702566	16	4.52814	trChip_vs_input_peak_4693
scaffold_256	89812	90706	895	90387	41	4.52724	trChip_vs_input_peak_2365
scaffold_186	1274108	1274502	395	1274240	53	4.52604	trChip_vs_input_peak_1560
scaffold_1014	22879	23368	490	23197	42	4.52543	trChip_vs_input_peak_105
scaffold_201	1264509	1265529	1021	1265366	42	4.52543	trChip_vs_input_peak_1752
scaffold_22	1044903	1045381	479	1045041	42	4.52543	trChip_vs_input_peak_1941
scaffold_34	685315	685764	450	685428	42	4.52543	trChip_vs_input_peak_3307
scaffold_398	1005402	1005907	506	1005629	42	4.52543	trChip_vs_input_peak_3858
scaffold_507	403720	404069	350	403943	42	4.52543	trChip_vs_input_peak_4714
scaffold_717	323277	323941	665	323417	42	4.52543	trChip_vs_input_peak_5819
scaffold_1087	184799	185251	453	184962	30	4.52482	trChip_vs_input_peak_284
scaffold_168	1997571	1998847	1277	1998626	30	4.52482	trChip_vs_input_peak_1323
scaffold_229	1273590	1273980	391	1273777	30	4.52482	trChip_vs_input_peak_2083
scaffold_42	1987074	1987570	497	1987347	30	4.52482	trChip_vs_input_peak_4084
scaffold_125	421806	422188	383	422019	31	4.5244	trChip_vs_input_peak_654
scaffold_125	1101825	1102330	506	1102059	31	4.5244	trChip_vs_input_peak_658
scaffold_176	1960657	1960929	273	1960781	31	4.5244	trChip_vs_input_peak_1450
scaffold_29	3811388	3811833	446	3811613	31	4.5244	trChip_vs_input_peak_2794
scaffold_29	3918746	3919198	453	3918922	31	4.5244	trChip_vs_input_peak_2795
scaffold_319	385638	386523	886	386200	31	4.5244	trChip_vs_input_peak_3113
scaffold_369	116759	117166	408	116933	31	4.5244	trChip_vs_input_peak_3558
scaffold_49	1875760	1876093	334	1875926	31	4.5244	trChip_vs_input_peak_4575
scaffold_562	219470	220718	1249	219576	31	4.5244	trChip_vs_input_peak_5012
scaffold_1185	16024	16323	300	16159	20	4.5223	trChip_vs_input_peak_514
scaffold_126	2122410	2122772	363	2122581	20	4.5223	trChip_vs_input_peak_676
scaffold_180	1981304	1981594	291	1981486	20	4.5223	trChip_vs_input_peak_1522
scaffold_218	1010284	1010566	283	1010373	20	4.5223	trChip_vs_input_peak_1921
scaffold_237	555706	556381	676	555925	20	4.5223	trChip_vs_input_peak_2159
scaffold_300	469866	470216	351	470034	20	4.5223	trChip_vs_input_peak_2954
scaffold_369	262632	262878	247	262808	20	4.5223	trChip_vs_input_peak_3561
scaffold_381	469252	469660	409	469429	20	4.5223	trChip_vs_input_peak_3738
scaffold_47	231275	231572	298	231405	20	4.5223	trChip_vs_input_peak_4404
scaffold_500	508333	509123	791	508648	20	4.5223	trChip_vs_input_peak_4672
scaffold_58	530863	531246	384	531061	20	4.5223	trChip_vs_input_peak_5089
scaffold_6669	2003	2425	423	2209	20	4.5223	trChip_vs_input_peak_5527
scaffold_704	11051	11378	328	11209	20	4.5223	trChip_vs_input_peak_5773
scaffold_1	2860165	2860706	542	2860530	39	4.52026	trChip_vs_input_peak_16
scaffold_163	519085	519347	263	519219	19	4.51974	trChip_vs_input_peak_1265
scaffold_284	1056811	1057159	349	1057008	19	4.51974	trChip_vs_input_peak_2724
scaffold_57	1022784	1023072	289	1022903	19	4.51974	trChip_vs_input_peak_5047

scaffold_76	424648	424926	279	424810	19	4.51974	trChip_vs_input_peak_5962
scaffold_1120	53083	53602	520	53445	28	4.51504	trChip_vs_input_peak_407
scaffold_179	358683	359702	1020	359449	28	4.51504	trChip_vs_input_peak_1482
scaffold_2	6642849	6643218	370	6643030	28	4.51504	trChip_vs_input_peak_1720
scaffold_22	2144756	2145042	287	2144938	28	4.51504	trChip_vs_input_peak_1962
scaffold_235	966000	966349	350	966172	28	4.51504	trChip_vs_input_peak_2147
scaffold_285	919969	920845	877	920135	28	4.51504	trChip_vs_input_peak_2734
scaffold_30	1593073	1593489	417	1593271	28	4.51504	trChip_vs_input_peak_2922
scaffold_401	734685	735039	355	734840	28	4.51504	trChip_vs_input_peak_3924
scaffold_6	4215955	4216300	346	4216069	28	4.51504	trChip_vs_input_peak_5206
scaffold_614	94078	94652	575	94450	28	4.51504	trChip_vs_input_peak_5276
scaffold_78	897554	897891	338	897707	28	4.51504	trChip_vs_input_peak_6072
scaffold_93	2817406	2817710	305	2817599	28	4.51504	trChip_vs_input_peak_6600
scaffold_240	1665098	1665751	654	1665570	37	4.51258	trChip_vs_input_peak_2191
scaffold_281	102570	103163	594	102759	26	4.50387	trChip_vs_input_peak_2678
scaffold_31	4139080	4140052	973	4139523	26	4.50387	trChip_vs_input_peak_3052
scaffold_40	1824833	1825139	307	1824943	26	4.50387	trChip_vs_input_peak_3903
scaffold_427	531888	532538	651	532104	26	4.50387	trChip_vs_input_peak_4142
scaffold_442	328082	328320	239	328215	26	4.50387	trChip_vs_input_peak_4253
scaffold_478	409032	409377	346	409224	26	4.50387	trChip_vs_input_peak_4501
scaffold_58	2411592	2412052	461	2411850	26	4.50387	trChip_vs_input_peak_5098
scaffold_175	1526300	1526707	408	1526502	50	4.50383	trChip_vs_input_peak_1434
scaffold_327	365343	366553	1211	366233	50	4.50383	trChip_vs_input_peak_3194
scaffold_328	388864	389265	402	389092	50	4.50383	trChip_vs_input_peak_3201
scaffold_334	191278	191789	512	191446	50	4.50383	trChip_vs_input_peak_3252
scaffold_63	3325911	3326242	332	3326101	17	4.50348	trChip_vs_input_peak_5353
scaffold_203	892373	893060	688	892860	39	4.49712	trChip_vs_input_peak_1781
scaffold_30	1120257	1120610	354	1120465	39	4.49712	trChip_vs_input_peak_2912
scaffold_35	1142607	1142959	353	1142773	39	4.49712	trChip_vs_input_peak_3390
scaffold_389	922401	923312	912	922949	39	4.49712	trChip_vs_input_peak_3776
scaffold_640	314382	314971	590	314764	42	4.49669	trChip_vs_input_peak_5399
scaffold_560	358427	358730	304	358571	23	4.49575	trChip_vs_input_peak_4993
scaffold_34	724484	725116	633	724771	33	4.49459	trChip_vs_input_peak_3309
scaffold_743	362248	362649	402	362473	33	4.49459	trChip_vs_input_peak_5923
scaffold_179	1294010	1294296	287	1294154	24	4.49098	trChip_vs_input_peak_1492
scaffold_18	4110528	4110873	346	4110703	24	4.49098	trChip_vs_input_peak_1509
scaffold_1096	35281	35877	597	35688	28	4.48536	trChip_vs_input_peak_309
scaffold_12	2037028	2037536	509	2037308	28	4.48536	trChip_vs_input_peak_542
scaffold_139	984044	984598	555	984436	28	4.48536	trChip_vs_input_peak_896
scaffold_1545	15961	16371	411	16166	28	4.48536	trChip_vs_input_peak_1139

scaffold_176	1411454	1411952	499	1411738	28	4.48536	trChip_vs_input_peak_1447
scaffold_196	1530775	1531030	256	1530882	28	4.48536	trChip_vs_input_peak_1651
scaffold_211	470804	471182	379	470963	28	4.48536	trChip_vs_input_peak_1863
scaffold_233	1093975	1094370	396	1094173	28	4.48536	trChip_vs_input_peak_2138
scaffold_263	165272	165617	346	165414	28	4.48536	trChip_vs_input_peak_2446
scaffold_280	1403079	1403870	792	1403702	28	4.48536	trChip_vs_input_peak_2672
scaffold_281	1060653	1060892	240	1060746	28	4.48536	trChip_vs_input_peak_2689
scaffold_290	768167	768451	285	768356	28	4.48536	trChip_vs_input_peak_2803
scaffold_311	1060409	1060807	399	1060635	28	4.48536	trChip_vs_input_peak_3071
scaffold_316	462398	462655	258	462510	28	4.48536	trChip_vs_input_peak_3099
scaffold_40	3670321	3671181	861	3670812	28	4.48536	trChip_vs_input_peak_3910
scaffold_408	920903	921495	593	921036	28	4.48536	trChip_vs_input_peak_3962
scaffold_67	1100316	1100652	337	1100468	28	4.48536	trChip_vs_input_peak_5544
scaffold_83	3040562	3040980	419	3040741	28	4.48536	trChip_vs_input_peak_6300
scaffold_979	149563	150010	448	149722	28	4.48536	trChip_vs_input_peak_6711
scaffold_1266	17139	17431	293	17285	31	4.48398	trChip_vs_input_peak_680
scaffold_696	451451	451834	384	451602	31	4.48398	trChip_vs_input_peak_5704
scaffold_19	4033145	4033379	235	4033285	15	4.48333	trChip_vs_input_peak_1606
scaffold_218	386154	386610	457	386434	47	4.47911	trChip_vs_input_peak_1915
scaffold_44	1428787	1429060	274	1428926	47	4.47911	trChip_vs_input_peak_4223
scaffold_627	102799	103239	441	103063	47	4.47911	trChip_vs_input_peak_5323
scaffold_404	18563	18907	345	18722	22	4.47594	trChip_vs_input_peak_3940
scaffold_503	779313	780021	709	779627	22	4.47594	trChip_vs_input_peak_4694
scaffold_12	3388479	3389208	730	3389049	29	4.47201	trChip_vs_input_peak_548
scaffold_155	1962487	1962834	348	1962668	29	4.47201	trChip_vs_input_peak_1161
scaffold_201	912206	912727	522	912548	29	4.47201	trChip_vs_input_peak_1751
scaffold_4	6073357	6073623	267	6073492	29	4.47201	trChip_vs_input_peak_3888
scaffold_596	515065	515374	310	515220	29	4.47201	trChip_vs_input_peak_5174
scaffold_5	402904	403261	358	403127	23	4.47184	trChip_vs_input_peak_4640
scaffold_11	4970638	4971035	398	4970921	24	4.46807	trChip_vs_input_peak_339
scaffold_1902	20324	20803	480	20601	55	4.46634	trChip_vs_input_peak_1611
scaffold_27	592665	593182	518	592899	55	4.46634	trChip_vs_input_peak_2508
scaffold_555	562169	563173	1005	562366	55	4.46634	trChip_vs_input_peak_4965
scaffold_1	5210860	5211205	346	5211074	36	4.46466	trChip_vs_input_peak_25
scaffold_1319	93728	95070	1343	93952	36	4.46466	trChip_vs_input_peak_776
scaffold_142	1338722	1339144	423	1338883	36	4.46466	trChip_vs_input_peak_940
scaffold_179	759653	760009	357	759858	36	4.46466	trChip_vs_input_peak_1488
scaffold_201	416263	416879	617	416655	36	4.46466	trChip_vs_input_peak_1748
scaffold_257	733589	733891	303	733700	36	4.46466	trChip_vs_input_peak_2382
scaffold_3	321261	321665	405	321452	36	4.46466	trChip_vs_input_peak_2867

scaffold_30	2695097	2695653	557	2695231	36	4.46466	trChip_vs_input_peak_2946
scaffold_30	2872056	2872431	376	2872231	36	4.46466	trChip_vs_input_peak_2948
scaffold_31	2930902	2931386	485	2931104	36	4.46466	trChip_vs_input_peak_3035
scaffold_369	43189	43891	703	43720	36	4.46466	trChip_vs_input_peak_3556
scaffold_440	660831	661466	636	661260	36	4.46466	trChip_vs_input_peak_4244
scaffold_449	457451	457875	425	457655	36	4.46466	trChip_vs_input_peak_4295
scaffold_664	413633	414033	401	413850	36	4.46466	trChip_vs_input_peak_5518
scaffold_671	9044	9600	557	9209	36	4.46466	trChip_vs_input_peak_5570
scaffold_77	3044926	3045603	678	3045152	36	4.46466	trChip_vs_input_peak_6048
scaffold_879	116827	117249	423	117096	36	4.46466	trChip_vs_input_peak_6436
scaffold_967	231704	231942	239	231856	36	4.46466	trChip_vs_input_peak_6687
scaffold_27	1703272	1703541	270	1703419	16	4.46032	trChip_vs_input_peak_2522
scaffold_1243	106786	107072	287	106968	17	4.45944	trChip_vs_input_peak_648
scaffold_133	1121744	1121978	235	1121876	17	4.45944	trChip_vs_input_peak_799
scaffold_174	1853512	1854009	498	1853898	17	4.45944	trChip_vs_input_peak_1423
scaffold_178	1159050	1159307	258	1159236	17	4.45944	trChip_vs_input_peak_1470
scaffold_268	801685	802012	328	801858	17	4.45944	trChip_vs_input_peak_2497
scaffold_279	504214	504453	240	504322	17	4.45944	trChip_vs_input_peak_2625
scaffold_42	1071004	1071238	235	1071087	17	4.45944	trChip_vs_input_peak_4071
scaffold_451	816378	816620	243	816514	17	4.45944	trChip_vs_input_peak_4323
scaffold_491	373022	373733	712	373588	17	4.45944	trChip_vs_input_peak_4598
scaffold_544	74838	75072	235	74930	17	4.45944	trChip_vs_input_peak_4911
scaffold_61	3040826	3041114	289	3040980	17	4.45944	trChip_vs_input_peak_5264
scaffold_63	3325374	3325760	387	3325549	17	4.45944	trChip_vs_input_peak_5352
scaffold_775	322889	323242	354	323034	17	4.45944	trChip_vs_input_peak_6063
scaffold_862	338000	338240	241	338202	17	4.45944	trChip_vs_input_peak_6398
scaffold_782	181997	183071	1075	182618	34	4.45856	trChip_vs_input_peak_6091
scaffold_132	602019	602432	414	602291	27	4.45841	trChip_vs_input_peak_785
scaffold_31	3159647	3159927	281	3159808	27	4.45841	trChip_vs_input_peak_3039
scaffold_16	1862859	1863123	265	1862981	20	4.45817	trChip_vs_input_peak_1226
scaffold_281	586784	587193	410	587012	20	4.45817	trChip_vs_input_peak_2684
scaffold_325	949983	950372	390	950080	20	4.45817	trChip_vs_input_peak_3176
scaffold_47	1340262	1340517	256	1340361	20	4.45817	trChip_vs_input_peak_4411
scaffold_64	1125129	1125363	235	1125249	20	4.45817	trChip_vs_input_peak_5386
scaffold_77	1333773	1334063	291	1333893	20	4.45817	trChip_vs_input_peak_6026
scaffold_8	4876816	4877062	247	4876974	20	4.45817	trChip_vs_input_peak_6166
scaffold_114	361429	361663	235	361558	13	4.45768	trChip_vs_input_peak_442
scaffold_399	891566	891800	235	891628	13	4.45768	trChip_vs_input_peak_3864
scaffold_597	242256	242599	344	242468	13	4.45768	trChip_vs_input_peak_5181
scaffold_662	261846	262154	309	262025	13	4.45768	trChip_vs_input_peak_5516

scaffold_273	721057	721449	393	721247	44	4.45142	trChip_vs_input_peak_2569
scaffold_701	296122	296566	445	296353	44	4.45142	trChip_vs_input_peak_5769
scaffold_37	457832	458272	441	458090	32	4.44627	trChip_vs_input_peak_3570
scaffold_4	4407739	4408176	438	4407957	32	4.44627	trChip_vs_input_peak_3880
scaffold_104	1914677	1915058	382	1914906	25	4.44282	trChip_vs_input_peak_161
scaffold_27	722262	722684	423	722479	25	4.44282	trChip_vs_input_peak_2510
scaffold_44	2461298	2461702	405	2461507	25	4.44282	trChip_vs_input_peak_4233
scaffold_878	20774	21016	243	20866	25	4.44282	trChip_vs_input_peak_6433
scaffold_247	400402	400930	529	400567	52	4.44222	trChip_vs_input_peak_2261
scaffold_296	175417	175759	343	175626	52	4.44222	trChip_vs_input_peak_2842
scaffold_3	7259425	7260227	803	7259616	52	4.44222	trChip_vs_input_peak_2907
scaffold_46	630288	630620	333	630465	52	4.44222	trChip_vs_input_peak_4354
scaffold_100	1498941	1499477	537	1499303	25	4.43822	trChip_vs_input_peak_74
scaffold_110	2214385	2215029	645	2214811	25	4.43822	trChip_vs_input_peak_364
scaffold_2034	840	1108	269	984	25	4.43822	trChip_vs_input_peak_1783
scaffold_22	4928173	4928591	419	4928392	25	4.43822	trChip_vs_input_peak_1983
scaffold_236	50539	51086	548	50806	25	4.43822	trChip_vs_input_peak_2152
scaffold_245	1124677	1125020	344	1124881	25	4.43822	trChip_vs_input_peak_2240
scaffold_250	1579354	1579688	335	1579533	25	4.43822	trChip_vs_input_peak_2323
scaffold_40	2461314	2461687	374	2461469	25	4.43822	trChip_vs_input_peak_3904
scaffold_460	779173	779476	304	779352	25	4.43822	trChip_vs_input_peak_4364
scaffold_488	867093	867378	286	867187	25	4.43822	trChip_vs_input_peak_4560
scaffold_5299	172	480	309	339	25	4.43822	trChip_vs_input_peak_4826
scaffold_58	518178	518621	444	518331	25	4.43822	trChip_vs_input_peak_5083
scaffold_722	285533	286074	542	285720	25	4.43822	trChip_vs_input_peak_5850
scaffold_7390	998	1328	331	1145	25	4.43822	trChip_vs_input_peak_5905
scaffold_62	1608951	1609320	370	1609148	18	4.43684	trChip_vs_input_peak_5308
scaffold_224	694469	694791	323	694573	30	4.43249	trChip_vs_input_peak_2028
scaffold_34	703314	703834	521	703693	30	4.43249	trChip_vs_input_peak_3308
scaffold_36	37345	37802	458	37639	30	4.43249	trChip_vs_input_peak_3480
scaffold_71	1933361	1934014	654	1933490	30	4.43249	trChip_vs_input_peak_5803
scaffold_75	2011829	2013683	1855	2012256	30	4.43249	trChip_vs_input_peak_5943
scaffold_8	3676829	3677222	394	3677027	30	4.43249	trChip_vs_input_peak_6161
scaffold_245	1115909	1116270	362	1116106	20	4.43132	trChip_vs_input_peak_2236
scaffold_577	98663	98904	242	98756	16	4.42717	trChip_vs_input_peak_5071
scaffold_119	2338662	2339214	553	2338844	33	4.42706	trChip_vs_input_peak_527
scaffold_151	1740618	1740927	310	1740786	33	4.42706	trChip_vs_input_peak_1087
scaffold_153	1255431	1257428	1998	1256443	33	4.42706	trChip_vs_input_peak_1104
scaffold_244	935353	935636	284	935562	33	4.42706	trChip_vs_input_peak_2227
scaffold_250	349223	350874	1652	349837	33	4.42706	trChip_vs_input_peak_2307

scaffold_265	68391	68867	477	68585	33	4.42706	trChip_vs_input_peak_2460
scaffold_266	437048	437798	751	437582	33	4.42706	trChip_vs_input_peak_2473
scaffold_348	495253	495711	459	495378	33	4.42706	trChip_vs_input_peak_3376
scaffold_40	3658823	3659193	371	3659023	33	4.42706	trChip_vs_input_peak_3909
scaffold_439	1008301	1008606	306	1008420	33	4.42706	trChip_vs_input_peak_4208
scaffold_44	1501886	1502243	358	1501998	33	4.42706	trChip_vs_input_peak_4224
scaffold_671	142050	142454	405	142238	33	4.42706	trChip_vs_input_peak_5574
scaffold_113	1975098	1975870	773	1975501	35	4.42506	trChip_vs_input_peak_434
scaffold_146	1468666	1469365	700	1469136	35	4.42506	trChip_vs_input_peak_1005
scaffold_377	591038	591435	398	591258	35	4.42506	trChip_vs_input_peak_3676
scaffold_594	580000	580491	492	580289	35	4.42506	trChip_vs_input_peak_5170
scaffold_103	209292	209530	239	209451	23	4.42477	trChip_vs_input_peak_134
scaffold_149	1550397	1550965	569	1550622	23	4.42477	trChip_vs_input_peak_1043
scaffold_232	1307786	1308076	291	1307884	23	4.42477	trChip_vs_input_peak_2132
scaffold_402	523050	523540	491	523313	23	4.42477	trChip_vs_input_peak_3933
scaffold_424	992289	992716	428	992509	23	4.42477	trChip_vs_input_peak_4112
scaffold_4756	5713	5980	268	5808	23	4.42477	trChip_vs_input_peak_4488
scaffold_560	362513	363138	626	363051	23	4.42477	trChip_vs_input_peak_4996
scaffold_682	95432	95793	362	95565	23	4.42477	trChip_vs_input_peak_5633
scaffold_74	2805642	2805951	310	2805861	23	4.42477	trChip_vs_input_peak_5915
scaffold_97	1064637	1064886	250	1064747	12	4.42048	trChip_vs_input_peak_6697
scaffold_129	1318735	1319066	332	1318922	41	4.42019	trChip_vs_input_peak_718
scaffold_135	788122	788671	550	788443	41	4.42019	trChip_vs_input_peak_836
scaffold_144	1668754	1669324	571	1669040	41	4.42019	trChip_vs_input_peak_971
scaffold_154	1418865	1419329	465	1419058	41	4.42019	trChip_vs_input_peak_1131
scaffold_244	351108	351589	482	351244	41	4.42019	trChip_vs_input_peak_2223
scaffold_346	134736	135627	892	135152	41	4.42019	trChip_vs_input_peak_3371
scaffold_354	26044	26426	383	26257	41	4.42019	trChip_vs_input_peak_3437
scaffold_377	133055	133655	601	133492	41	4.42019	trChip_vs_input_peak_3671
scaffold_40	756062	756436	375	756230	41	4.42019	trChip_vs_input_peak_3896
scaffold_44	2475882	2476184	303	2476028	41	4.42019	trChip_vs_input_peak_4234
scaffold_83	1964780	1965597	818	1965188	41	4.42019	trChip_vs_input_peak_6293
scaffold_11	4157430	4157995	566	4157636	28	4.4169	trChip_vs_input_peak_336
scaffold_340	657914	658520	607	658151	28	4.4169	trChip_vs_input_peak_3337
scaffold_54	2805843	2806142	300	2805961	28	4.4169	trChip_vs_input_peak_4886
scaffold_60	1359049	1359286	238	1359158	28	4.4169	trChip_vs_input_peak_5221
scaffold_810	20155	20697	543	20465	28	4.4169	trChip_vs_input_peak_6212
scaffold_86	1141318	1141560	243	1141422	21	4.41625	trChip_vs_input_peak_6384
scaffold_473	578485	579021	537	578756	49	4.41552	trChip_vs_input_peak_4447
scaffold_760	432172	432518	347	432371	49	4.41552	trChip_vs_input_peak_6008

scaffold_689	502085	503176	1092	502382	57	4.41215	trChip_vs_input_peak_5654
scaffold_1081	177562	177948	387	177688	33	4.41137	trChip_vs_input_peak_275
scaffold_155	747159	748399	1241	747358	33	4.41137	trChip_vs_input_peak_1145
scaffold_26	3137834	3138404	571	3138057	33	4.41137	trChip_vs_input_peak_2407
scaffold_262	232873	233669	797	232964	33	4.41137	trChip_vs_input_peak_2433
scaffold_105	1902341	1902614	274	1902503	16	4.41078	trChip_vs_input_peak_176
scaffold_48	1776006	1776257	252	1776145	16	4.41078	trChip_vs_input_peak_4515
scaffold_53	2528138	2528437	300	2528276	16	4.41078	trChip_vs_input_peak_4839
scaffold_827	77856	78134	279	78075	16	4.41078	trChip_vs_input_peak_6272
scaffold_512	514742	515232	491	514932	38	4.40726	trChip_vs_input_peak_4746
scaffold_1973	9158	9392	235	9299	21	4.40363	trChip_vs_input_peak_1662
scaffold_22	2029259	2029607	349	2029468	21	4.40363	trChip_vs_input_peak_1950
scaffold_284	873075	873309	235	873185	21	4.40363	trChip_vs_input_peak_2717
scaffold_310	905313	905700	388	905467	21	4.40363	trChip_vs_input_peak_3057
scaffold_125	1690114	1690511	398	1690314	26	4.39915	trChip_vs_input_peak_662
scaffold_3	1203816	1204098	283	1203916	26	4.39915	trChip_vs_input_peak_2872
scaffold_5	142128	142470	343	142340	26	4.39915	trChip_vs_input_peak_4635
scaffold_7	3365375	3365724	350	3365548	26	4.39915	trChip_vs_input_peak_5739
scaffold_83	1905002	1905349	348	1905140	26	4.39915	trChip_vs_input_peak_6292
scaffold_3	375747	376406	660	375966	31	4.39607	trChip_vs_input_peak_2868
scaffold_786	271955	272428	474	272229	31	4.39607	trChip_vs_input_peak_6108
scaffold_303	1000134	1000490	357	1000336	36	4.39382	trChip_vs_input_peak_2975
scaffold_478	256216	256634	419	256386	36	4.39382	trChip_vs_input_peak_4498
scaffold_78	2504982	2505922	941	2505196	36	4.39382	trChip_vs_input_peak_6077
scaffold_339	396895	397603	709	397230	54	4.38658	trChip_vs_input_peak_3297
scaffold_1527	33875	34321	447	34073	46	4.3858	trChip_vs_input_peak_1101
scaffold_175	1795243	1795582	340	1795391	46	4.3858	trChip_vs_input_peak_1435
scaffold_243	872223	872775	553	872546	46	4.3858	trChip_vs_input_peak_2211
scaffold_35	3412379	3413001	623	3412789	46	4.3858	trChip_vs_input_peak_3413
scaffold_447	758610	760169	1560	759938	46	4.3858	trChip_vs_input_peak_4273
scaffold_593	52681	53344	664	53087	46	4.3858	trChip_vs_input_peak_5165
scaffold_628	427358	427789	432	427555	46	4.3858	trChip_vs_input_peak_5332
scaffold_648	472295	473167	873	472716	46	4.3858	trChip_vs_input_peak_5427
scaffold_671	230458	231436	979	231232	46	4.3858	trChip_vs_input_peak_5576
scaffold_101	945315	945986	672	945799	38	4.38469	trChip_vs_input_peak_86
scaffold_1084	170833	171170	338	170989	38	4.38469	trChip_vs_input_peak_280
scaffold_194	1249260	1249768	509	1249534	38	4.38469	trChip_vs_input_peak_1639
scaffold_30	1325043	1325363	321	1325146	38	4.38469	trChip_vs_input_peak_2917
scaffold_44	1569257	1569511	255	1569409	38	4.38469	trChip_vs_input_peak_4225
scaffold_59	397961	398340	380	398142	38	4.38469	trChip_vs_input_peak_5150

scaffold_614	39957	40270	314	40120	38	4.38469	trChip_vs_input_peak_5275
scaffold_972	181894	182407	514	182208	38	4.38469	trChip_vs_input_peak_6707
scaffold_12	5222065	5223082	1018	5222975	30	4.38301	trChip_vs_input_peak_560
scaffold_171	489776	490461	686	490110	30	4.38301	trChip_vs_input_peak_1367
scaffold_184	651825	652796	972	652270	30	4.38301	trChip_vs_input_peak_1545
scaffold_206	634509	634802	294	634639	30	4.38301	trChip_vs_input_peak_1800
scaffold_22	688226	688597	372	688315	30	4.38301	trChip_vs_input_peak_1940
scaffold_2319	325	737	413	453	30	4.38301	trChip_vs_input_peak_2121
scaffold_38	3649360	3649776	417	3649635	30	4.38301	trChip_vs_input_peak_3723
scaffold_39	2263555	2264448	894	2263968	30	4.38301	trChip_vs_input_peak_3791
scaffold_390	388740	389150	411	389041	30	4.38301	trChip_vs_input_peak_3798
scaffold_44	1208485	1208734	250	1208599	30	4.38301	trChip_vs_input_peak_4219
scaffold_468	927393	927691	299	927577	30	4.38301	trChip_vs_input_peak_4394
scaffold_5	401290	401611	322	401466	30	4.38301	trChip_vs_input_peak_4637
scaffold_76	2312480	2312869	390	2312686	30	4.38301	trChip_vs_input_peak_5970
scaffold_845	74563	75427	865	75033	30	4.38301	trChip_vs_input_peak_6336
scaffold_1278	80336	80606	271	80475	22	4.38018	trChip_vs_input_peak_700
scaffold_174	310303	310545	243	310456	22	4.38018	trChip_vs_input_peak_1402
scaffold_21	2463242	2463565	324	2463387	22	4.38018	trChip_vs_input_peak_1846
scaffold_226	1427460	1427767	308	1427565	22	4.38018	trChip_vs_input_peak_2057
scaffold_289	907261	907724	464	907566	22	4.38018	trChip_vs_input_peak_2776
scaffold_413	625709	626070	362	625942	22	4.38018	trChip_vs_input_peak_4017
scaffold_42	1882280	1882707	428	1882574	22	4.38018	trChip_vs_input_peak_4082
scaffold_43	1639092	1639353	262	1639306	22	4.38018	trChip_vs_input_peak_4162
scaffold_439	711218	711505	288	711388	22	4.38018	trChip_vs_input_peak_4207
scaffold_503	492803	493243	441	492936	22	4.38018	trChip_vs_input_peak_4690
scaffold_511	119831	120087	257	119968	22	4.38018	trChip_vs_input_peak_4734
scaffold_53	1047253	1047516	264	1047382	22	4.38018	trChip_vs_input_peak_4832
scaffold_53	2430314	2430699	386	2430562	22	4.38018	trChip_vs_input_peak_4835
scaffold_686	2108	2442	335	2220	22	4.38018	trChip_vs_input_peak_5640
scaffold_747	30853	31253	401	31036	22	4.38018	trChip_vs_input_peak_5931
scaffold_786	375108	375739	632	375301	22	4.38018	trChip_vs_input_peak_6111
scaffold_8666	14042	14544	503	14351	22	4.38018	trChip_vs_input_peak_6410
scaffold_217	1464357	1465501	1145	1464406	39	4.37902	trChip_vs_input_peak_1911
scaffold_1221	34176	34743	568	34588	34	4.37895	trChip_vs_input_peak_609
scaffold_16	3519460	3520223	764	3519993	34	4.37895	trChip_vs_input_peak_1229
scaffold_214	1105090	1105620	531	1105292	34	4.37895	trChip_vs_input_peak_1887
scaffold_146	1131996	1132571	576	1132203	29	4.37886	trChip_vs_input_peak_1002
scaffold_287	390589	391107	519	390761	29	4.37886	trChip_vs_input_peak_2750
scaffold_395	1035125	1035832	708	1035684	29	4.37886	trChip_vs_input_peak_3825

scaffold_617	71220	71524	305	71444	29	4.37886	trChip_vs_input_peak_5287
scaffold_20	978255	978526	272	978370	24	4.37872	trChip_vs_input_peak_1729
scaffold_251	76728	77162	435	76961	24	4.37872	trChip_vs_input_peak_2327
scaffold_924	279187	279532	346	279400	24	4.37872	trChip_vs_input_peak_6587
scaffold_540	306398	306908	511	306798	20	4.37857	trChip_vs_input_peak_4893
scaffold_301	35294	35555	262	35455	19	4.37853	trChip_vs_input_peak_2957
scaffold_315	368484	368770	287	368567	19	4.37853	trChip_vs_input_peak_3091
scaffold_37	1834581	1835220	640	1834794	19	4.37853	trChip_vs_input_peak_3582
scaffold_77	3038832	3039204	373	3038954	16	4.37835	trChip_vs_input_peak_6043
scaffold_237	1662877	1663111	235	1663017	14	4.3782	trChip_vs_input_peak_2163
scaffold_1070	51323	51574	252	51473	14	4.37432	trChip_vs_input_peak_233
scaffold_1117	131844	132083	240	131960	14	4.37432	trChip_vs_input_peak_400
scaffold_1180	88821	89087	267	88895	14	4.37432	trChip_vs_input_peak_513
scaffold_277	1503075	1503309	235	1503260	14	4.37432	trChip_vs_input_peak_2606
scaffold_281	1051605	1051839	235	1051680	14	4.37432	trChip_vs_input_peak_2688
scaffold_328	696164	696398	235	696205	14	4.37432	trChip_vs_input_peak_3205
scaffold_333	1213287	1213538	252	1213351	14	4.37432	trChip_vs_input_peak_3249
scaffold_366	1115987	1116429	443	1116277	14	4.37432	trChip_vs_input_peak_3534
scaffold_369	88572	88806	235	88718	14	4.37432	trChip_vs_input_peak_3557
scaffold_393	1046064	1046343	280	1046136	14	4.37432	trChip_vs_input_peak_3818
scaffold_494	506106	506344	239	506156	14	4.37432	trChip_vs_input_peak_4613
scaffold_667	426209	426526	318	426334	14	4.37432	trChip_vs_input_peak_5532
scaffold_688	4841	5087	247	4967	14	4.37432	trChip_vs_input_peak_5649
scaffold_708	371160	371398	239	371310	14	4.37432	trChip_vs_input_peak_5788
scaffold_739	107979	108305	327	108148	14	4.37432	trChip_vs_input_peak_5902
scaffold_753	90841	91134	294	90908	14	4.37432	trChip_vs_input_peak_5954
scaffold_789	202541	202900	360	202715	14	4.37432	trChip_vs_input_peak_6113
scaffold_44	1908268	1908585	318	1908383	37	4.36464	trChip_vs_input_peak_4230
scaffold_400	438362	438752	391	438569	18	4.36412	trChip_vs_input_peak_3914
scaffold_640	537317	537994	678	537441	32	4.36239	trChip_vs_input_peak_5403
scaffold_690	176200	176683	484	176393	32	4.36239	trChip_vs_input_peak_5683
scaffold_215	519577	519831	255	519721	15	4.36125	trChip_vs_input_peak_1892
scaffold_218	602406	603317	912	602572	27	4.35935	trChip_vs_input_peak_1918
scaffold_265	1533577	1534199	623	1534013	27	4.35935	trChip_vs_input_peak_2468
scaffold_283	708712	709201	490	709017	27	4.35935	trChip_vs_input_peak_2712
scaffold_325	956336	956637	302	956452	27	4.35935	trChip_vs_input_peak_3178
scaffold_473	577806	578389	584	578055	51	4.35841	trChip_vs_input_peak_4446
scaffold_951	249341	249575	235	249497	12	4.35705	trChip_vs_input_peak_6647
scaffold_1128	22995	23229	235	23047	11	4.35519	trChip_vs_input_peak_415
scaffold_32	384024	384258	235	384140	11	4.35519	trChip_vs_input_peak_3124

scaffold_12	1669386	1669649	264	1669481	22	4.35499	trChip_vs_input_peak_537
scaffold_122	2626275	2626542	268	2626436	22	4.35499	trChip_vs_input_peak_608
scaffold_232	1254691	1255740	1050	1255410	22	4.35499	trChip_vs_input_peak_2126
scaffold_339	349572	350030	459	349799	22	4.35499	trChip_vs_input_peak_3296
scaffold_585	256082	256379	298	256268	22	4.35499	trChip_vs_input_peak_5122
scaffold_8	65534	66062	529	65735	22	4.35499	trChip_vs_input_peak_6149
scaffold_155	909202	909815	614	909436	43	4.3525	trChip_vs_input_peak_1148
scaffold_155	1909932	1910378	447	1910222	43	4.3525	trChip_vs_input_peak_1159
scaffold_258	532296	532560	265	532466	43	4.3525	trChip_vs_input_peak_2388
scaffold_321	1220506	1220916	411	1220695	43	4.3525	trChip_vs_input_peak_3148
scaffold_480	676159	676515	357	676299	40	4.3525	trChip_vs_input_peak_4530
scaffold_555	707661	708293	633	708056	43	4.3525	trChip_vs_input_peak_4967
scaffold_58	520800	521097	298	520984	19	4.35134	trChip_vs_input_peak_5085
scaffold_169	904510	904858	349	904694	35	4.34877	trChip_vs_input_peak_1325
scaffold_1186	34233	34593	361	34459	17	4.34823	trChip_vs_input_peak_516
scaffold_127	10626	10915	290	10822	17	4.34823	trChip_vs_input_peak_684
scaffold_155	1998318	1998560	243	1998423	17	4.34823	trChip_vs_input_peak_1163
scaffold_726	453123	453361	239	453211	17	4.34823	trChip_vs_input_peak_5862
scaffold_781	72987	73249	263	73066	17	4.34823	trChip_vs_input_peak_6082
scaffold_1	6378500	6378917	418	6378753	35	4.34399	trChip_vs_input_peak_37
scaffold_1319	50001	50773	773	50219	35	4.34399	trChip_vs_input_peak_775
scaffold_356	1025500	1025786	287	1025653	35	4.34399	trChip_vs_input_peak_3467
scaffold_445	829841	830136	296	830012	35	4.34399	trChip_vs_input_peak_4265
scaffold_448	1025826	1026286	461	1025965	35	4.34399	trChip_vs_input_peak_4292
scaffold_489	493454	494813	1360	493936	35	4.34399	trChip_vs_input_peak_4562
scaffold_563	605466	606213	748	605879	35	4.34399	trChip_vs_input_peak_5021
scaffold_76	2628512	2630007	1496	2628676	35	4.34399	trChip_vs_input_peak_5990
scaffold_146	224838	225223	386	225045	30	4.34385	trChip_vs_input_peak_996
scaffold_158	1094348	1094826	479	1094543	30	4.34385	trChip_vs_input_peak_1187
scaffold_242	1364156	1364536	381	1364324	30	4.34385	trChip_vs_input_peak_2207
scaffold_289	461206	461679	474	461489	30	4.34385	trChip_vs_input_peak_2770
scaffold_314	1321778	1322191	414	1321996	30	4.34385	trChip_vs_input_peak_3090
scaffold_503	288886	289261	376	289095	30	4.34385	trChip_vs_input_peak_4684
scaffold_84	2973210	2973751	542	2973578	30	4.34385	trChip_vs_input_peak_6332
scaffold_982	182977	183212	236	183072	30	4.34385	trChip_vs_input_peak_6723
scaffold_243	1094131	1094421	291	1094346	25	4.33706	trChip_vs_input_peak_2214
scaffold_246	1600693	1600947	255	1600835	25	4.33706	trChip_vs_input_peak_2259
scaffold_469	774508	774831	324	774633	25	4.33706	trChip_vs_input_peak_4399
scaffold_833	318960	319318	359	319160	12	4.33631	trChip_vs_input_peak_6313
scaffold_11	2032356	2032638	283	2032472	27	4.33069	trChip_vs_input_peak_326

scaffold_20	1934031	1934909	879	1934169	27	4.33069	trChip_vs_input_peak_1737
scaffold_205	1636232	1636533	302	1636402	27	4.33069	trChip_vs_input_peak_1791
scaffold_250	1575356	1576634	1279	1576292	27	4.33069	trChip_vs_input_peak_2321
scaffold_27	1697190	1697542	353	1697360	27	4.33069	trChip_vs_input_peak_2521
scaffold_277	552599	552923	325	552701	27	4.33069	trChip_vs_input_peak_2601
scaffold_31	3158191	3159152	962	3158942	27	4.33069	trChip_vs_input_peak_3038
scaffold_318	282809	283386	578	282942	27	4.33069	trChip_vs_input_peak_3110
scaffold_323	952921	953164	244	953079	27	4.33069	trChip_vs_input_peak_3161
scaffold_345	379934	380523	590	380130	27	4.33069	trChip_vs_input_peak_3365
scaffold_3745	306	642	337	426	27	4.33069	trChip_vs_input_peak_3646
scaffold_426	839155	839513	359	839300	27	4.33069	trChip_vs_input_peak_4119
scaffold_427	341814	342110	297	341916	27	4.33069	trChip_vs_input_peak_4137
scaffold_496	45249	45666	418	45404	27	4.33069	trChip_vs_input_peak_4625
scaffold_68	2107674	2107934	261	2107848	27	4.33069	trChip_vs_input_peak_5620
scaffold_69	765603	766157	555	765933	27	4.33069	trChip_vs_input_peak_5663
scaffold_807	148991	149454	464	149119	27	4.33069	trChip_vs_input_peak_6196
scaffold_88	871374	871668	295	871543	27	4.33069	trChip_vs_input_peak_6446
scaffold_959	118698	119925	1228	119638	27	4.33069	trChip_vs_input_peak_6662
scaffold_18	63353	63707	355	63567	41	4.32753	trChip_vs_input_peak_1497
scaffold_205	1438165	1438411	247	1438341	20	4.32707	trChip_vs_input_peak_1788
scaffold_267	584733	585079	347	584897	20	4.32707	trChip_vs_input_peak_2480
scaffold_62	1298634	1298958	325	1298746	20	4.32707	trChip_vs_input_peak_5307
scaffold_822	254728	254962	235	254815	20	4.32707	trChip_vs_input_peak_6259
scaffold_102	848077	848511	435	848320	28	4.32294	trChip_vs_input_peak_119
scaffold_295	1357103	1357389	287	1357281	28	4.32294	trChip_vs_input_peak_2837
scaffold_55	2712156	2712436	281	2712228	28	4.32294	trChip_vs_input_peak_4950
scaffold_76	2613000	2613313	314	2613135	28	4.32294	trChip_vs_input_peak_5981
scaffold_199	1779804	1780355	552	1780182	36	4.3206	trChip_vs_input_peak_1683
scaffold_851	358222	358617	396	358361	12	4.31577	trChip_vs_input_peak_6368
scaffold_106	40972	41739	768	41288	40	4.31494	trChip_vs_input_peak_198
scaffold_1076	138721	139284	564	138800	40	4.31494	trChip_vs_input_peak_241
scaffold_114	1383935	1384563	629	1384460	40	4.31494	trChip_vs_input_peak_443
scaffold_226	1652762	1653232	471	1653021	40	4.31494	trChip_vs_input_peak_2058
scaffold_246	959587	960004	418	959782	40	4.31494	trChip_vs_input_peak_2255
scaffold_40	793448	794231	784	793775	40	4.31494	trChip_vs_input_peak_3897
scaffold_448	652781	653110	330	652930	40	4.31494	trChip_vs_input_peak_4285
scaffold_1179	39163	39417	255	39316	31	4.31154	trChip_vs_input_peak_498
scaffold_208	508511	509318	808	508949	31	4.31154	trChip_vs_input_peak_1825
scaffold_251	1485710	1486297	588	1485854	31	4.31154	trChip_vs_input_peak_2337
scaffold_282	1264095	1264408	314	1264273	31	4.31154	trChip_vs_input_peak_2709

scaffold_30	4032391	4032672	282	4032476	31	4.31154	trChip_vs_input_peak_2951
scaffold_744	416688	416968	281	416840	31	4.31154	trChip_vs_input_peak_5928
scaffold_97	2186996	2187302	307	2187139	31	4.31154	trChip_vs_input_peak_6700
scaffold_529	323139	323447	309	323345	23	4.31134	trChip_vs_input_peak_4817
scaffold_716	299364	299799	436	299557	23	4.31134	trChip_vs_input_peak_5814
scaffold_77	3042989	3043524	536	3043367	23	4.31134	trChip_vs_input_peak_6045
scaffold_28	1364266	1364521	256	1364287	15	4.31094	trChip_vs_input_peak_2648
scaffold_572	114387	114732	346	114524	15	4.31094	trChip_vs_input_peak_5064
scaffold_108	1638717	1639229	513	1638943	19	4.30695	trChip_vs_input_peak_263
scaffold_133	1129613	1129873	261	1129760	19	4.30695	trChip_vs_input_peak_800
scaffold_137	512532	513017	486	512690	19	4.30695	trChip_vs_input_peak_863
scaffold_171	1681735	1681983	249	1681800	19	4.30695	trChip_vs_input_peak_1374
scaffold_21	4952639	4953040	402	4952839	19	4.30695	trChip_vs_input_peak_1853
scaffold_26	2020144	2020450	307	2020270	19	4.30695	trChip_vs_input_peak_2403
scaffold_28	317954	318507	554	318112	19	4.30695	trChip_vs_input_peak_2640
scaffold_309	312090	312372	283	312286	19	4.30695	trChip_vs_input_peak_3006
scaffold_325	1151630	1152044	415	1151942	19	4.30695	trChip_vs_input_peak_3180
scaffold_406	462172	462585	414	462360	19	4.30695	trChip_vs_input_peak_3950
scaffold_42	437725	438013	289	437844	19	4.30695	trChip_vs_input_peak_4067
scaffold_446	193667	194162	496	193954	19	4.30695	trChip_vs_input_peak_4266
scaffold_470	809231	809480	250	809308	19	4.30695	trChip_vs_input_peak_4434
scaffold_549	87345	87667	323	87464	19	4.30695	trChip_vs_input_peak_4929
scaffold_57	1887301	1887626	326	1887491	19	4.30695	trChip_vs_input_peak_5051
scaffold_823	71947	72335	389	72101	19	4.30695	trChip_vs_input_peak_6262
scaffold_833	242893	243246	354	243088	19	4.30695	trChip_vs_input_peak_6311
scaffold_35	955881	957346	1466	957187	42	4.30399	trChip_vs_input_peak_3387
scaffold_11	952592	952938	347	952761	34	4.30214	trChip_vs_input_peak_321
scaffold_338	1115205	1115624	420	1115396	34	4.30214	trChip_vs_input_peak_3288
scaffold_30	2244207	2244517	311	2244383	26	4.29918	trChip_vs_input_peak_2935
scaffold_311	997464	998237	774	997678	26	4.29918	trChip_vs_input_peak_3068
scaffold_426	122862	123246	385	123077	26	4.29918	trChip_vs_input_peak_4114
scaffold_761	347008	347564	557	347383	26	4.29918	trChip_vs_input_peak_6012
scaffold_77	3189738	3189995	258	3189894	26	4.29918	trChip_vs_input_peak_6052
scaffold_127	1615985	1616464	480	1616268	10	4.29902	trChip_vs_input_peak_691
scaffold_1611	7214	7448	235	7352	10	4.29902	trChip_vs_input_peak_1252
scaffold_146	676293	677185	893	676485	32	4.29685	trChip_vs_input_peak_1000
scaffold_165	882440	882748	309	882565	32	4.29685	trChip_vs_input_peak_1285
scaffold_196	1795365	1795602	238	1795468	32	4.29685	trChip_vs_input_peak_1653
scaffold_267	1186494	1186992	499	1186709	32	4.29685	trChip_vs_input_peak_2487
scaffold_307	635365	635946	582	635714	32	4.29685	trChip_vs_input_peak_2996

scaffold_325	949391	949792	402	949560	32	4.29685	trChip_vs_input_peak_3175
scaffold_328	322294	322708	415	322507	32	4.29685	trChip_vs_input_peak_3200
scaffold_333	1127427	1128569	1143	1127840	32	4.29685	trChip_vs_input_peak_3247
scaffold_38	644807	645247	441	645005	32	4.29685	trChip_vs_input_peak_3690
scaffold_417	432990	433352	363	433178	32	4.29685	trChip_vs_input_peak_4050
scaffold_449	287913	288400	488	288120	32	4.29685	trChip_vs_input_peak_4294
scaffold_476	824001	824491	491	824140	32	4.29685	trChip_vs_input_peak_4489
scaffold_492	524526	524854	329	524705	32	4.29685	trChip_vs_input_peak_4605
scaffold_656	178365	178655	291	178563	32	4.29685	trChip_vs_input_peak_5479
scaffold_670	351742	352209	468	352035	32	4.29685	trChip_vs_input_peak_5565
scaffold_70	158043	158374	332	158240	32	4.29685	trChip_vs_input_peak_5752
scaffold_88	39393	39759	367	39561	32	4.29685	trChip_vs_input_peak_6437
scaffold_911	77404	77707	304	77561	32	4.29685	trChip_vs_input_peak_6552
scaffold_94	711296	711598	303	711501	32	4.29685	trChip_vs_input_peak_6617
scaffold_105	1695525	1695854	330	1695678	15	4.29443	trChip_vs_input_peak_173
scaffold_211	145029	145266	238	145169	18	4.29375	trChip_vs_input_peak_1862
scaffold_22	3677258	3677616	359	3677417	18	4.29375	trChip_vs_input_peak_1972
scaffold_31	1634820	1635091	272	1634978	18	4.29375	trChip_vs_input_peak_3028
scaffold_38	3166063	3166405	343	3166181	18	4.29375	trChip_vs_input_peak_3720
scaffold_531	613929	614195	267	614032	18	4.29375	trChip_vs_input_peak_4847
scaffold_47	3013014	3013256	243	3013128	21	4.29326	trChip_vs_input_peak_4423
scaffold_285	1443779	1444155	377	1443962	45	4.29248	trChip_vs_input_peak_2741
scaffold_3	7280017	7280730	714	7280517	45	4.29248	trChip_vs_input_peak_2908
scaffold_431	756039	756815	777	756389	45	4.29248	trChip_vs_input_peak_4181
scaffold_85	785871	786477	607	786070	29	4.28951	trChip_vs_input_peak_6348
scaffold_226	412673	412923	251	412772	16	4.28388	trChip_vs_input_peak_2049
scaffold_315	511564	511814	251	511650	16	4.28388	trChip_vs_input_peak_3092
scaffold_113	1439602	1439843	242	1439772	13	4.28254	trChip_vs_input_peak_426
scaffold_255	1470748	1470982	235	1470826	13	4.28254	trChip_vs_input_peak_2363
scaffold_234	917562	918117	556	917731	32	4.28162	trChip_vs_input_peak_2141
scaffold_322	1350847	1351462	616	1351130	32	4.28162	trChip_vs_input_peak_3160
scaffold_325	951052	952264	1213	951506	32	4.28162	trChip_vs_input_peak_3177
scaffold_1	4059859	4060242	384	4060018	21	4.28133	trChip_vs_input_peak_18
scaffold_309	1249645	1249973	329	1249767	21	4.28133	trChip_vs_input_peak_3016
scaffold_325	887608	888131	524	887916	21	4.28133	trChip_vs_input_peak_3171
scaffold_83	86731	87096	366	86815	21	4.28133	trChip_vs_input_peak_6287
scaffold_884	150034	150274	241	150151	10	4.28047	trChip_vs_input_peak_6462
scaffold_49	3071666	3072038	373	3071805	35	4.27507	trChip_vs_input_peak_4586
scaffold_617	201527	201875	349	201703	35	4.27507	trChip_vs_input_peak_5289
scaffold_144	1279257	1280774	1518	1280020	50	4.27459	trChip_vs_input_peak_968

scaffold_143	1888875	1889378	504	1889155	37	4.27226	trChip_vs_input_peak_959
scaffold_214	1388044	1388538	495	1388308	37	4.27226	trChip_vs_input_peak_1890
scaffold_224	1159099	1159418	320	1159302	37	4.27226	trChip_vs_input_peak_2032
scaffold_366	1018692	1018999	308	1018867	37	4.27226	trChip_vs_input_peak_3533
scaffold_469	674844	675194	351	675041	37	4.27226	trChip_vs_input_peak_4397
scaffold_587	115728	116265	538	115814	37	4.27226	trChip_vs_input_peak_5136
scaffold_7	5138771	5139217	447	5138993	37	4.27226	trChip_vs_input_peak_5741
scaffold_273	983760	984314	555	984152	24	4.27195	trChip_vs_input_peak_2575
scaffold_10	2542135	2542705	571	2542512	24	4.26752	trChip_vs_input_peak_55
scaffold_1080	14673	14979	307	14811	24	4.26752	trChip_vs_input_peak_269
scaffold_128	1886079	1886702	624	1886276	24	4.26752	trChip_vs_input_peak_703
scaffold_145	355593	355920	328	355800	24	4.26752	trChip_vs_input_peak_978
scaffold_155	2038838	2039492	655	2039131	24	4.26752	trChip_vs_input_peak_1164
scaffold_17	3970223	3970499	277	3970430	24	4.26752	trChip_vs_input_peak_1351
scaffold_178	1382664	1383032	369	1382816	24	4.26752	trChip_vs_input_peak_1472
scaffold_267	954015	954428	414	954200	24	4.26752	trChip_vs_input_peak_2483
scaffold_27	1142654	1143125	472	1142728	24	4.26752	trChip_vs_input_peak_2516
scaffold_27	3279109	3279409	301	3279269	24	4.26752	trChip_vs_input_peak_2545
scaffold_281	196929	197491	563	197142	24	4.26752	trChip_vs_input_peak_2682
scaffold_36	3194477	3195063	587	3194923	24	4.26752	trChip_vs_input_peak_3491
scaffold_374	652701	652947	247	652845	24	4.26752	trChip_vs_input_peak_3641
scaffold_38	2732170	2732473	304	2732289	24	4.26752	trChip_vs_input_peak_3712
scaffold_447	409451	409702	252	409629	24	4.26752	trChip_vs_input_peak_4271
scaffold_474	487833	488187	355	488021	24	4.26752	trChip_vs_input_peak_4461
scaffold_559	708373	708685	313	708506	24	4.26752	trChip_vs_input_peak_4975
scaffold_683	353968	354405	438	354128	24	4.26752	trChip_vs_input_peak_5636
scaffold_70	2689141	2689577	437	2689374	24	4.26752	trChip_vs_input_peak_5764
scaffold_765	268918	269254	337	269081	24	4.26752	trChip_vs_input_peak_6015
scaffold_816	123929	124536	608	124328	24	4.26752	trChip_vs_input_peak_6227
scaffold_825	353178	353461	284	353398	24	4.26752	trChip_vs_input_peak_6268
scaffold_226	685949	686205	257	686115	11	4.2668	trChip_vs_input_peak_2051
scaffold_336	422870	423255	386	423069	27	4.2646	trChip_vs_input_peak_3268
scaffold_386	839101	839378	278	839301	27	4.2646	trChip_vs_input_peak_3764
scaffold_6	3594623	3595235	613	3595101	27	4.2646	trChip_vs_input_peak_5202
scaffold_475	667089	667732	644	667412	20	4.26437	trChip_vs_input_peak_4483
scaffold_111	351317	352350	1034	351900	55	4.26001	trChip_vs_input_peak_374
scaffold_112	1039199	1039530	332	1039376	30	4.25869	trChip_vs_input_peak_402
scaffold_45	2355733	2356156	424	2356027	30	4.25869	trChip_vs_input_peak_4308
scaffold_364	829090	829330	241	829191	12	4.25529	trChip_vs_input_peak_3522
scaffold_617	76150	76460	311	76248	14	4.25416	trChip_vs_input_peak_5288

scaffold_10	551414	551704	291	551546	33	4.25384	trChip_vs_input_peak_48
scaffold_239	336220	337128	909	336387	33	4.25384	trChip_vs_input_peak_2172
scaffold_386	760244	760565	322	760417	33	4.25384	trChip_vs_input_peak_3763
scaffold_39	582206	582635	430	582456	33	4.25384	trChip_vs_input_peak_3785
scaffold_154	44116	44439	324	44309	42	4.25358	trChip_vs_input_peak_1111
scaffold_213	1732136	1732933	798	1732488	42	4.25358	trChip_vs_input_peak_1885
scaffold_35	1111871	1112757	887	1112201	42	4.25358	trChip_vs_input_peak_3388
scaffold_615	280727	281222	496	280992	42	4.25358	trChip_vs_input_peak_5281
scaffold_74	1595713	1595986	274	1595878	42	4.25358	trChip_vs_input_peak_5910
scaffold_129	373797	374082	286	373937	16	4.25329	trChip_vs_input_peak_711
scaffold_20	1793727	1793994	268	1793842	16	4.25329	trChip_vs_input_peak_1735
scaffold_47	1191614	1192167	554	1191728	16	4.25329	trChip_vs_input_peak_4409
scaffold_580	93853	94114	262	93939	16	4.25329	trChip_vs_input_peak_5104
scaffold_1143	23373	23607	235	23555	11	4.25256	trChip_vs_input_peak_450
scaffold_727	435110	435431	322	435273	11	4.25256	trChip_vs_input_peak_5863
scaffold_540	303511	303745	235	303609	20	4.25205	trChip_vs_input_peak_4892
scaffold_398	111017	111304	288	111152	36	4.24978	trChip_vs_input_peak_3843
scaffold_104	536487	536721	235	536606	19	4.24587	trChip_vs_input_peak_153
scaffold_1231	101234	101551	318	101385	19	4.24587	trChip_vs_input_peak_632
scaffold_147	733001	733535	535	733116	19	4.24587	trChip_vs_input_peak_1013
scaffold_2	3884798	3885318	521	3884881	19	4.24587	trChip_vs_input_peak_1705
scaffold_261	938727	939345	619	938960	19	4.24587	trChip_vs_input_peak_2424
scaffold_427	14538	15001	464	14768	19	4.24587	trChip_vs_input_peak_4127
scaffold_427	284854	285141	288	284991	19	4.24587	trChip_vs_input_peak_4134
scaffold_549	584786	585022	237	584893	15	4.24564	trChip_vs_input_peak_4932
scaffold_64	858251	858488	238	858330	15	4.24564	trChip_vs_input_peak_5385
scaffold_9	1760673	1760907	235	1760825	11	4.24525	trChip_vs_input_peak_6493
scaffold_483	724017	724477	461	724159	42	4.24338	trChip_vs_input_peak_4536
scaffold_11	3390413	3390865	453	3390650	29	4.24163	trChip_vs_input_peak_330
scaffold_167	1106157	1106685	529	1106477	29	4.24163	trChip_vs_input_peak_1311
scaffold_199	1760956	1761774	819	1761370	29	4.24163	trChip_vs_input_peak_1682
scaffold_2	3162063	3162575	513	3162201	29	4.24163	trChip_vs_input_peak_1701
scaffold_259	1146121	1147249	1129	1146876	29	4.24163	trChip_vs_input_peak_2395
scaffold_354	139270	139582	313	139396	29	4.24163	trChip_vs_input_peak_3438
scaffold_380	449744	450873	1130	450668	29	4.24163	trChip_vs_input_peak_3726
scaffold_40	3739900	3740143	244	3740042	29	4.24163	trChip_vs_input_peak_3911
scaffold_405	326100	326376	277	326240	29	4.24163	trChip_vs_input_peak_3946
scaffold_407	503561	504075	515	503871	29	4.24163	trChip_vs_input_peak_3955
scaffold_429	644543	645126	584	644888	29	4.24163	trChip_vs_input_peak_4151
scaffold_43	570629	570883	255	570710	29	4.24163	trChip_vs_input_peak_4158

scaffold_649	355449	355714	266	355582	29	4.24163	trChip_vs_input_peak_5439
scaffold_726	300469	300791	323	300560	29	4.24163	trChip_vs_input_peak_5861
scaffold_85	2626018	2626499	482	2626324	29	4.24163	trChip_vs_input_peak_6359
scaffold_907	260329	260683	355	260456	29	4.24163	trChip_vs_input_peak_6525
scaffold_12	1924676	1925150	475	1925033	22	4.24041	trChip_vs_input_peak_540
scaffold_256	855672	855964	293	855802	22	4.24041	trChip_vs_input_peak_2371
scaffold_4	6000223	6000890	668	6000404	22	4.24041	trChip_vs_input_peak_3886
scaffold_589	563667	564025	359	563845	22	4.24041	trChip_vs_input_peak_5147
scaffold_160	2018338	2018732	395	2018511	47	4.2389	trChip_vs_input_peak_1246
scaffold_173	1845907	1846268	362	1846066	47	4.2389	trChip_vs_input_peak_1393
scaffold_34	3912240	3912589	350	3912390	47	4.2389	trChip_vs_input_peak_3332
scaffold_498	356567	357149	583	356825	47	4.2389	trChip_vs_input_peak_4631
scaffold_67	2698830	2699234	405	2699026	47	4.2389	trChip_vs_input_peak_5556
scaffold_760	304167	305051	885	304474	47	4.2389	trChip_vs_input_peak_6004
scaffold_122	652466	652804	339	652692	25	4.23621	trChip_vs_input_peak_596
scaffold_16	1306270	1306528	259	1306374	25	4.23621	trChip_vs_input_peak_1218
scaffold_174	608549	608892	344	608746	25	4.23621	trChip_vs_input_peak_1408
scaffold_218	455068	455406	339	455246	25	4.23621	trChip_vs_input_peak_1917
scaffold_319	679345	679685	341	679572	25	4.23621	trChip_vs_input_peak_3117
scaffold_876	87182	87511	330	87356	25	4.23621	trChip_vs_input_peak_6432
scaffold_31	3252485	3252875	391	3252690	28	4.23289	trChip_vs_input_peak_3041
scaffold_417	569875	570273	399	570089	28	4.23289	trChip_vs_input_peak_4052
scaffold_47	2196478	2197156	679	2197015	28	4.23289	trChip_vs_input_peak_4416
scaffold_210	1627165	1627721	557	1627362	31	4.2302	trChip_vs_input_peak_1861
scaffold_239	318471	318862	392	318651	31	4.2302	trChip_vs_input_peak_2170
scaffold_303	702327	702737	411	702442	31	4.2302	trChip_vs_input_peak_2968
scaffold_384	430997	431769	773	431576	31	4.2302	trChip_vs_input_peak_3757
scaffold_96	1951834	1952168	335	1951997	22	4.22928	trChip_vs_input_peak_6675
scaffold_469	774898	775435	538	775264	34	4.22797	trChip_vs_input_peak_4400
scaffold_886	150913	151313	401	151091	52	4.22707	trChip_vs_input_peak_6463
scaffold_261	928433	928953	521	928620	18	4.22561	trChip_vs_input_peak_2421
scaffold_671	11805	12637	833	12420	18	4.22561	trChip_vs_input_peak_5571
scaffold_1022	112794	113284	491	113069	34	4.22332	trChip_vs_input_peak_128
scaffold_160	2151943	2152252	310	2152139	34	4.22332	trChip_vs_input_peak_1247
scaffold_23	3462544	3462829	286	3462719	34	4.22332	trChip_vs_input_peak_2098
scaffold_249	1264313	1264859	547	1264528	34	4.22332	trChip_vs_input_peak_2286
scaffold_265	1330086	1330403	318	1330256	34	4.22332	trChip_vs_input_peak_2466
scaffold_27	1679852	1680104	253	1679988	34	4.22332	trChip_vs_input_peak_2520
scaffold_28	3986320	3986744	425	3986469	34	4.22332	trChip_vs_input_peak_2663
scaffold_30	1792914	1793449	536	1793194	34	4.22332	trChip_vs_input_peak_2927

scaffold_33	3817208	3818169	962	3817627	34	4.22332	trChip_vs_input_peak_3226
scaffold_352	760351	761044	694	760814	34	4.22332	trChip_vs_input_peak_3428
scaffold_3769	7125	7453	329	7252	34	4.22332	trChip_vs_input_peak_3667
scaffold_507	341900	342598	699	342365	34	4.22332	trChip_vs_input_peak_4712
scaffold_538	265600	265970	371	265767	34	4.22332	trChip_vs_input_peak_4867
scaffold_540	328428	328742	315	328529	34	4.22332	trChip_vs_input_peak_4895
scaffold_7	5546318	5546792	475	5546612	34	4.22332	trChip_vs_input_peak_5746
scaffold_915	90388	90912	525	90684	34	4.22332	trChip_vs_input_peak_6558
scaffold_106	535734	535970	237	535921	14	4.22	trChip_vs_input_peak_199
scaffold_115	723174	723408	235	723313	12	4.2159	trChip_vs_input_peak_463
scaffold_11	5001297	5001575	279	5001493	20	4.21551	trChip_vs_input_peak_346
scaffold_289	386627	387071	445	386853	18	4.21224	trChip_vs_input_peak_2764
scaffold_176	1316842	1317172	331	1317015	16	4.21169	trChip_vs_input_peak_1444
scaffold_198	458793	459048	256	458900	16	4.21169	trChip_vs_input_peak_1665
scaffold_25	3900032	3900291	260	3900129	16	4.21169	trChip_vs_input_peak_2302
scaffold_268	640527	640807	281	640632	16	4.21169	trChip_vs_input_peak_2493
scaffold_3	3943852	3944088	237	3944038	16	4.21169	trChip_vs_input_peak_2885
scaffold_341	1099756	1099990	235	1099968	16	4.21169	trChip_vs_input_peak_3349
scaffold_3512	2653	2923	271	2725	16	4.21169	trChip_vs_input_peak_3424
scaffold_544	254137	254375	239	254226	16	4.21169	trChip_vs_input_peak_4912
scaffold_609	144959	145324	366	145100	16	4.21169	trChip_vs_input_peak_5257
scaffold_721	111426	111660	235	111597	16	4.21169	trChip_vs_input_peak_5842
scaffold_770	7705	8079	375	7854	16	4.21169	trChip_vs_input_peak_6053
scaffold_776	47650	47895	246	47840	16	4.21169	trChip_vs_input_peak_6064
scaffold_832	8605	8883	279	8787	16	4.21169	trChip_vs_input_peak_6308
scaffold_84	2392801	2393157	357	2392951	16	4.21169	trChip_vs_input_peak_6330
scaffold_950	98543	98869	327	98659	16	4.21169	trChip_vs_input_peak_6638
scaffold_88	2693991	2694268	278	2694075	21	4.21116	trChip_vs_input_peak_6456
scaffold_10	4925469	4925865	397	4925640	39	4.2097	trChip_vs_input_peak_67
scaffold_16	1302321	1302983	663	1302535	39	4.2097	trChip_vs_input_peak_1217
scaffold_436	950174	950785	612	950386	39	4.2097	trChip_vs_input_peak_4195
scaffold_484	55989	56514	526	56349	39	4.2097	trChip_vs_input_peak_4539
scaffold_714	446116	446709	594	446303	39	4.2097	trChip_vs_input_peak_5808
scaffold_8	4147760	4148545	786	4148164	39	4.2097	trChip_vs_input_peak_6162
scaffold_109	1304957	1305687	731	1305175	62	4.20916	trChip_vs_input_peak_302
scaffold_135	1230551	1230867	317	1230698	32	4.20378	trChip_vs_input_peak_839
scaffold_27	2274149	2274394	246	2274264	32	4.20378	trChip_vs_input_peak_2534
scaffold_1010	157171	157727	557	157551	29	4.20373	trChip_vs_input_peak_103
scaffold_184	1974492	1974994	503	1974811	29	4.20373	trChip_vs_input_peak_1550
scaffold_240	1664289	1664835	547	1664418	29	4.20373	trChip_vs_input_peak_2190

scaffold_272	126678	127169	492	126968	29	4.20373	trChip_vs_input_peak_2560
scaffold_295	641021	641547	527	641290	29	4.20373	trChip_vs_input_peak_2835
scaffold_154	911901	912230	330	911998	26	4.20366	trChip_vs_input_peak_1125
scaffold_154	1135346	1135685	340	1135464	26	4.20366	trChip_vs_input_peak_1128
scaffold_735	11953	12191	239	12044	26	4.20366	trChip_vs_input_peak_5889
scaffold_78	1365846	1366250	405	1366069	26	4.20366	trChip_vs_input_peak_6074
scaffold_199	1648842	1649221	380	1649070	23	4.20358	trChip_vs_input_peak_1681
scaffold_22	4900167	4900502	336	4900394	23	4.20358	trChip_vs_input_peak_1981
scaffold_250	352017	352304	288	352164	23	4.20358	trChip_vs_input_peak_2308
scaffold_250	1574469	1575048	580	1574693	23	4.20358	trChip_vs_input_peak_2320
scaffold_378	732795	733259	465	733076	23	4.20358	trChip_vs_input_peak_3681
scaffold_39	606292	606526	235	606390	23	4.20358	trChip_vs_input_peak_3786
scaffold_47	2902429	2902692	264	2902550	23	4.20358	trChip_vs_input_peak_4422
scaffold_1222	75606	75902	297	75738	20	4.20347	trChip_vs_input_peak_613
scaffold_213	232410	232792	383	232595	20	4.20347	trChip_vs_input_peak_1878
scaffold_226	938337	938582	246	938433	20	4.20347	trChip_vs_input_peak_2053
scaffold_279	448805	449041	237	448912	20	4.20347	trChip_vs_input_peak_2623
scaffold_281	107379	107652	274	107457	20	4.20347	trChip_vs_input_peak_2680
scaffold_588	395843	396159	317	396056	20	4.20347	trChip_vs_input_peak_5143
scaffold_134	1878894	1879284	391	1879184	17	4.20332	trChip_vs_input_peak_820
scaffold_1532	16359	16917	559	16718	17	4.20332	trChip_vs_input_peak_1109
scaffold_605	487726	488000	275	487798	17	4.20332	trChip_vs_input_peak_5247
scaffold_621	350195	350448	254	350354	17	4.20332	trChip_vs_input_peak_5314
scaffold_641	382747	383113	367	382912	17	4.20332	trChip_vs_input_peak_5406
scaffold_75	89247	89635	389	89350	17	4.20332	trChip_vs_input_peak_5938
scaffold_232	593371	593605	235	593499	14	4.20312	trChip_vs_input_peak_2125
scaffold_372	1091124	1091358	235	1091235	11	4.20282	trChip_vs_input_peak_3629
scaffold_44	1075879	1076249	371	1075985	11	4.20282	trChip_vs_input_peak_4217
scaffold_9	4894365	4894611	247	4894459	11	4.20282	trChip_vs_input_peak_6498
scaffold_311	761892	762331	440	762078	44	4.19917	trChip_vs_input_peak_3064
scaffold_132	537175	537462	288	537332	18	4.19896	trChip_vs_input_peak_781
scaffold_270	474981	475243	263	475170	12	4.19648	trChip_vs_input_peak_2550
scaffold_130	2105938	2106342	405	2106164	49	4.19077	trChip_vs_input_peak_761
scaffold_851	96045	96698	654	96238	49	4.19077	trChip_vs_input_peak_6367
scaffold_1050	67515	68070	556	67909	21	4.18973	trChip_vs_input_peak_189
scaffold_1070	2253	2559	307	2439	21	4.18973	trChip_vs_input_peak_231
scaffold_118	1141666	1141905	240	1141782	21	4.18973	trChip_vs_input_peak_507
scaffold_123	1611267	1611684	418	1611462	21	4.18973	trChip_vs_input_peak_622
scaffold_125	1688099	1688810	712	1688603	21	4.18973	trChip_vs_input_peak_660
scaffold_1709	32249	32729	481	32454	21	4.18973	trChip_vs_input_peak_1365

scaffold_178	1516282	1516647	366	1516423	21	4.18973	trChip_vs_input_peak_1474
scaffold_219	109137	109538	402	109428	21	4.18973	trChip_vs_input_peak_1928
scaffold_219	194152	194407	256	194335	21	4.18973	trChip_vs_input_peak_1929
scaffold_2290	17677	18738	1062	18433	21	4.18973	trChip_vs_input_peak_2088
scaffold_245	1116595	1116829	235	1116734	21	4.18973	trChip_vs_input_peak_2237
scaffold_273	728563	728819	257	728639	21	4.18973	trChip_vs_input_peak_2571
scaffold_32	391882	392194	313	392002	21	4.18973	trChip_vs_input_peak_3125
scaffold_504	433375	433772	398	433586	21	4.18973	trChip_vs_input_peak_4699
scaffold_58	519439	520600	1162	519937	21	4.18973	trChip_vs_input_peak_5084
scaffold_783	130306	130598	293	130404	21	4.18973	trChip_vs_input_peak_6095
scaffold_8	2067608	2067908	301	2067754	21	4.18973	trChip_vs_input_peak_6156
scaffold_874	88559	89058	500	88676	21	4.18973	trChip_vs_input_peak_6430
scaffold_892	262515	262853	339	262671	21	4.18973	trChip_vs_input_peak_6485
scaffold_99	934285	934719	435	934486	21	4.18973	trChip_vs_input_peak_6734
scaffold_125	1690641	1691445	805	1691192	36	4.18124	trChip_vs_input_peak_663
scaffold_22	2017444	2017683	240	2017611	20	4.17959	trChip_vs_input_peak_1948
scaffold_54	1014076	1014433	358	1014291	33	4.17922	trChip_vs_input_peak_4877
scaffold_16	4433583	4433943	361	4433720	30	4.1768	trChip_vs_input_peak_1234
scaffold_4	6497997	6498281	285	6498153	30	4.1768	trChip_vs_input_peak_3893
scaffold_67	41443	41773	331	41655	30	4.1768	trChip_vs_input_peak_5537
scaffold_104	1265643	1266235	593	1266078	26	4.17602	trChip_vs_input_peak_157
scaffold_104	1505952	1506364	413	1506103	26	4.17602	trChip_vs_input_peak_158
scaffold_10552	9305	9644	340	9432	26	4.17602	trChip_vs_input_peak_193
scaffold_117	2081044	2081456	413	2081230	26	4.17602	trChip_vs_input_peak_490
scaffold_1538	26726	26967	242	26796	26	4.17602	trChip_vs_input_peak_1110
scaffold_172	652272	652765	494	652465	26	4.17602	trChip_vs_input_peak_1379
scaffold_175	979431	980113	683	979909	26	4.17602	trChip_vs_input_peak_1430
scaffold_191	547532	548008	477	547729	26	4.17602	trChip_vs_input_peak_1618
scaffold_223	845629	845884	256	845776	26	4.17602	trChip_vs_input_peak_2024
scaffold_247	1373911	1374215	305	1374015	26	4.17602	trChip_vs_input_peak_2267
scaffold_255	953025	953270	246	953076	26	4.17602	trChip_vs_input_peak_2358
scaffold_295	579554	579821	268	579698	26	4.17602	trChip_vs_input_peak_2832
scaffold_34	387466	387805	340	387653	26	4.17602	trChip_vs_input_peak_3305
scaffold_35	1603210	1604375	1166	1603503	26	4.17602	trChip_vs_input_peak_3405
scaffold_356	49330	49704	375	49514	26	4.17602	trChip_vs_input_peak_3459
scaffold_477	337255	337859	605	337633	26	4.17602	trChip_vs_input_peak_4495
scaffold_533	689240	690282	1043	689552	26	4.17602	trChip_vs_input_peak_4851
scaffold_65	1393371	1394706	1336	1393529	26	4.17602	trChip_vs_input_peak_5456
scaffold_670	213553	214089	537	213858	26	4.17602	trChip_vs_input_peak_5561
scaffold_742	315400	315725	326	315599	27	4.17388	trChip_vs_input_peak_5921

scaffold_76	2623036	2623613	578	2623495	27	4.17388	trChip_vs_input_peak_5985
scaffold_480	141135	141441	307	141327	23	4.17229	trChip_vs_input_peak_4527
scaffold_11	4996920	4997223	304	4997129	24	4.17025	trChip_vs_input_peak_343
scaffold_184	328486	329517	1032	329336	24	4.17025	trChip_vs_input_peak_1542
scaffold_227	386989	387356	368	387141	24	4.17025	trChip_vs_input_peak_2059
scaffold_314	1001896	1002649	754	1002117	24	4.17025	trChip_vs_input_peak_3087
scaffold_36	1374642	1375108	467	1374981	24	4.17025	trChip_vs_input_peak_3488
scaffold_427	6255	6727	473	6364	19	4.17007	trChip_vs_input_peak_4123
scaffold_450	707472	707765	294	707551	19	4.17007	trChip_vs_input_peak_4320
scaffold_107	255399	255850	452	255679	31	4.16665	trChip_vs_input_peak_224
scaffold_1111	137889	138239	351	138097	31	4.16665	trChip_vs_input_peak_386
scaffold_186	829895	830175	281	829984	31	4.16665	trChip_vs_input_peak_1556
scaffold_189	855280	855526	247	855366	31	4.16665	trChip_vs_input_peak_1582
scaffold_2	2272262	2272887	626	2272557	31	4.16665	trChip_vs_input_peak_1699
scaffold_273	834180	834447	268	834275	31	4.16665	trChip_vs_input_peak_2572
scaffold_37	3138856	3139259	404	3139071	31	4.16665	trChip_vs_input_peak_3603
scaffold_395	297304	297616	313	297406	31	4.16665	trChip_vs_input_peak_3823
scaffold_410	344579	344887	309	344677	31	4.16665	trChip_vs_input_peak_3994
scaffold_423	828790	829209	420	828960	31	4.16665	trChip_vs_input_peak_4106
scaffold_449	628706	629152	447	628904	31	4.16665	trChip_vs_input_peak_4296
scaffold_58	18736	19061	326	18899	31	4.16665	trChip_vs_input_peak_5081
scaffold_63	2962555	2963065	511	2962860	31	4.16665	trChip_vs_input_peak_5343
scaffold_687	352590	352879	290	352764	31	4.16665	trChip_vs_input_peak_5647
scaffold_725	144759	145596	838	145204	31	4.16665	trChip_vs_input_peak_5856
scaffold_830	82765	83706	942	83088	31	4.16665	trChip_vs_input_peak_6302
scaffold_2	5175632	5175872	241	5175759	21	4.16564	trChip_vs_input_peak_1713
scaffold_356	1105252	1105756	505	1105478	21	4.16564	trChip_vs_input_peak_3468
scaffold_640	387737	388067	331	387877	21	4.16564	trChip_vs_input_peak_5402
scaffold_690	223241	223584	344	223377	21	4.16564	trChip_vs_input_peak_5684
scaffold_971	238986	239283	298	239208	21	4.16564	trChip_vs_input_peak_6706
scaffold_147	1842051	1842376	326	1842277	16	4.16408	trChip_vs_input_peak_1017
scaffold_226	1162678	1162988	311	1162808	36	4.15983	trChip_vs_input_peak_2055
scaffold_256	550565	551278	714	550747	36	4.15983	trChip_vs_input_peak_2370
scaffold_297	1427687	1428136	450	1427910	36	4.15983	trChip_vs_input_peak_2853
scaffold_304	1369398	1369804	407	1369576	36	4.15983	trChip_vs_input_peak_2982
scaffold_515	301555	302011	457	301805	36	4.15983	trChip_vs_input_peak_4752
scaffold_515	337066	337805	740	337470	36	4.15983	trChip_vs_input_peak_4753
scaffold_656	264806	265886	1081	265611	36	4.15983	trChip_vs_input_peak_5481
scaffold_73	916764	917069	306	916885	36	4.15983	trChip_vs_input_peak_5877
scaffold_15	4584342	4584843	502	4584543	18	4.1596	trChip_vs_input_peak_1064

scaffold_17	363986	364247	262	364156	18	4.1596	trChip_vs_input_peak_1335
scaffold_117	746899	747243	345	747015	34	4.15632	trChip_vs_input_peak_487
scaffold_19	4681665	4682021	357	4681833	41	4.15466	trChip_vs_input_peak_1609
scaffold_628	116409	117379	971	117146	41	4.15466	trChip_vs_input_peak_5329
scaffold_519	361623	363187	1565	362723	21	4.15442	trChip_vs_input_peak_4780
scaffold_194	1409081	1409505	425	1409337	31	4.15187	trChip_vs_input_peak_1640
scaffold_39	3291873	3292701	829	3292343	31	4.15187	trChip_vs_input_peak_3794
scaffold_148	223445	224166	722	224055	15	4.15132	trChip_vs_input_peak_1026
scaffold_163	645675	645981	307	645877	15	4.15132	trChip_vs_input_peak_1266
scaffold_900	249499	249748	250	249614	15	4.15132	trChip_vs_input_peak_6516
scaffold_142	1376383	1376919	537	1376724	46	4.15059	trChip_vs_input_peak_943
scaffold_303	560899	561142	244	560975	17	4.14803	trChip_vs_input_peak_2967
scaffold_883	22360	22733	374	22519	51	4.14731	trChip_vs_input_peak_6460
scaffold_376	519233	519598	366	519442	28	4.14652	trChip_vs_input_peak_3652
scaffold_800	400637	401203	567	400969	28	4.14652	trChip_vs_input_peak_6186
scaffold_474	449132	449776	645	449281	19	4.1454	trChip_vs_input_peak_4457
scaffold_603	634784	635129	346	634981	25	4.13995	trChip_vs_input_peak_5240
scaffold_67	1601308	1601563	256	1601388	25	4.13995	trChip_vs_input_peak_5551
scaffold_83	1904402	1904673	272	1904484	25	4.13995	trChip_vs_input_peak_6291
scaffold_288	574893	575138	246	575031	12	4.13927	trChip_vs_input_peak_2756
scaffold_372	184032	184411	380	184195	12	4.13927	trChip_vs_input_peak_3619
scaffold_853	116788	117247	460	117050	12	4.13927	trChip_vs_input_peak_6371
scaffold_43	1729187	1729422	236	1729245	15	4.136	trChip_vs_input_peak_4164
scaffold_202	831998	832246	249	832104	20	4.13264	trChip_vs_input_peak_1766
scaffold_1	6227989	6228223	235	6228139	22	4.1317	trChip_vs_input_peak_33
scaffold_11	135144	136018	875	135267	22	4.1317	trChip_vs_input_peak_313
scaffold_159	1990709	1991001	293	1990872	22	4.1317	trChip_vs_input_peak_1209
scaffold_406	141535	141915	381	141699	22	4.1317	trChip_vs_input_peak_3949
scaffold_63	2925123	2925357	235	2925277	22	4.1317	trChip_vs_input_peak_5342
scaffold_79	2940882	2941491	610	2941369	22	4.1317	trChip_vs_input_peak_6122
scaffold_798	73128	73586	459	73455	22	4.1317	trChip_vs_input_peak_6146
scaffold_1059	12134	12469	336	12263	32	4.12873	trChip_vs_input_peak_197
scaffold_228	628617	629070	454	628838	32	4.12873	trChip_vs_input_peak_2074
scaffold_30	2316972	2317311	340	2317151	29	4.12131	trChip_vs_input_peak_2938
scaffold_81	2173567	2173824	258	2173730	26	4.12125	trChip_vs_input_peak_6210
scaffold_21	2048470	2048785	316	2048620	19	4.12102	trChip_vs_input_peak_1844
scaffold_28	2617025	2617266	242	2617191	19	4.12102	trChip_vs_input_peak_2656
scaffold_336	1296825	1297321	497	1296955	19	4.12102	trChip_vs_input_peak_3275
scaffold_400	445006	445522	517	445365	19	4.12102	trChip_vs_input_peak_3915
scaffold_42	222203	222542	340	222364	19	4.12102	trChip_vs_input_peak_4065

scaffold_474	450382	450992	611	450535	19	4.12102	trChip_vs_input_peak_4458
scaffold_665	235262	235587	326	235398	19	4.12102	trChip_vs_input_peak_5521
scaffold_560	355525	355786	262	355636	18	4.12098	trChip_vs_input_peak_4992
scaffold_411	611016	611267	252	611137	15	4.1208	trChip_vs_input_peak_4008
scaffold_138	2200880	2201243	364	2201087	26	4.11229	trChip_vs_input_peak_883
scaffold_35	1584289	1584764	476	1584403	26	4.11229	trChip_vs_input_peak_3399
scaffold_36	383292	383744	453	383519	26	4.11229	trChip_vs_input_peak_3484
scaffold_59	1080800	1081162	363	1080962	26	4.11229	trChip_vs_input_peak_5151
scaffold_619	630239	630484	246	630350	26	4.11229	trChip_vs_input_peak_5303
scaffold_84	907367	908144	778	907708	26	4.11229	trChip_vs_input_peak_6324
scaffold_122	58174	58469	296	58305	17	4.1075	trChip_vs_input_peak_591
scaffold_275	247309	247687	379	247496	33	4.10717	trChip_vs_input_peak_2584
scaffold_469	798760	799474	715	799083	33	4.10717	trChip_vs_input_peak_4402
scaffold_75	1249539	1249810	272	1249720	33	4.10717	trChip_vs_input_peak_5942
scaffold_381	466639	466957	319	466749	16	4.10666	trChip_vs_input_peak_3735
scaffold_74	1377425	1377670	246	1377546	16	4.10666	trChip_vs_input_peak_5908
scaffold_990	75635	75958	324	75818	16	4.10666	trChip_vs_input_peak_6743
scaffold_2421	134	681	548	448	43	4.10585	trChip_vs_input_peak_2208
scaffold_747	395473	395707	235	395610	14	4.10464	trChip_vs_input_peak_5933
scaffold_125	432982	433328	347	433147	38	4.10446	trChip_vs_input_peak_655
scaffold_191	1098657	1099214	558	1099025	38	4.10446	trChip_vs_input_peak_1622
scaffold_285	923035	923695	661	923212	38	4.10446	trChip_vs_input_peak_2736
scaffold_31	2856310	2856680	371	2856529	38	4.10446	trChip_vs_input_peak_3033
scaffold_334	113517	114001	485	113790	38	4.10446	trChip_vs_input_peak_3251
scaffold_336	895576	896186	611	895781	38	4.10446	trChip_vs_input_peak_3274
scaffold_444	800167	801093	927	800445	38	4.10446	trChip_vs_input_peak_4261
scaffold_109	486584	486892	309	486769	33	4.10266	trChip_vs_input_peak_292
scaffold_116	2489047	2489400	354	2489199	33	4.10266	trChip_vs_input_peak_474
scaffold_126	1911934	1912312	379	1912083	33	4.10266	trChip_vs_input_peak_673
scaffold_134	597702	598036	335	597877	33	4.10266	trChip_vs_input_peak_810
scaffold_207	416145	416444	300	416270	33	4.10266	trChip_vs_input_peak_1810
scaffold_27	1746709	1747270	562	1747073	33	4.10266	trChip_vs_input_peak_2523
scaffold_283	1062425	1062845	421	1062647	33	4.10266	trChip_vs_input_peak_2716
scaffold_285	881053	882432	1380	881984	33	4.10266	trChip_vs_input_peak_2732
scaffold_318	227996	228420	425	228209	33	4.10266	trChip_vs_input_peak_3108
scaffold_403	1058181	1058828	648	1058512	33	4.10266	trChip_vs_input_peak_3938
scaffold_5	1498040	1498860	821	1498468	33	4.10266	trChip_vs_input_peak_4644
scaffold_66	1865502	1866218	717	1865972	33	4.10266	trChip_vs_input_peak_5495
scaffold_70	2479416	2479748	333	2479587	33	4.10266	trChip_vs_input_peak_5761
scaffold_1368	85165	85419	255	85283	12	4.10199	trChip_vs_input_peak_859

scaffold_140	100165	100598	434	100384	23	4.10107	trChip_vs_input_peak_922
scaffold_29	1396554	1396810	257	1396731	23	4.10107	trChip_vs_input_peak_2786
scaffold_62	1956975	1957331	357	1957178	23	4.10107	trChip_vs_input_peak_5311
scaffold_648	565016	565484	469	565134	23	4.10107	trChip_vs_input_peak_5429
scaffold_1	6343994	6345322	1329	6344559	28	4.10024	trChip_vs_input_peak_36
scaffold_1014	108201	108465	265	108367	28	4.10024	trChip_vs_input_peak_106
scaffold_1015	172652	173127	476	172859	28	4.10024	trChip_vs_input_peak_109
scaffold_158	1062901	1063163	263	1063099	28	4.10024	trChip_vs_input_peak_1185
scaffold_160	1609042	1609422	381	1609200	28	4.10024	trChip_vs_input_peak_1243
scaffold_173	672300	672965	666	672889	28	4.10024	trChip_vs_input_peak_1386
scaffold_208	509413	509854	442	509612	28	4.10024	trChip_vs_input_peak_1826
scaffold_213	1112897	1113557	661	1113252	28	4.10024	trChip_vs_input_peak_1883
scaffold_243	521026	521412	387	521229	28	4.10024	trChip_vs_input_peak_2210
scaffold_248	205289	205558	270	205441	28	4.10024	trChip_vs_input_peak_2272
scaffold_311	862214	862642	429	862409	28	4.10024	trChip_vs_input_peak_3067
scaffold_371	777533	777841	309	777660	28	4.10024	trChip_vs_input_peak_3617
scaffold_42	1223288	1223856	569	1223422	28	4.10024	trChip_vs_input_peak_4077
scaffold_449	703242	703520	279	703416	28	4.10024	trChip_vs_input_peak_4298
scaffold_473	81999	82376	378	82202	28	4.10024	trChip_vs_input_peak_4440
scaffold_496	502124	502429	306	502301	28	4.10024	trChip_vs_input_peak_4628
scaffold_511	467333	468068	736	467468	28	4.10024	trChip_vs_input_peak_4737
scaffold_53	46846	47134	289	47057	28	4.10024	trChip_vs_input_peak_4827
scaffold_562	51060	51650	591	51364	28	4.10024	trChip_vs_input_peak_5011
scaffold_606	604031	604322	292	604196	28	4.10024	trChip_vs_input_peak_5251
scaffold_665	432376	432853	478	432572	28	4.10024	trChip_vs_input_peak_5522
scaffold_70	535538	536219	682	535702	28	4.10024	trChip_vs_input_peak_5753
scaffold_70	2448089	2448351	263	2448277	28	4.10024	trChip_vs_input_peak_5760
scaffold_719	465697	466043	347	465879	28	4.10024	trChip_vs_input_peak_5826
scaffold_734	288402	289428	1027	288654	28	4.10024	trChip_vs_input_peak_5887
scaffold_76	2639853	2640827	975	2640119	28	4.10024	trChip_vs_input_peak_5995
scaffold_79	2480430	2480766	337	2480640	28	4.10024	trChip_vs_input_peak_6120
scaffold_147	1909181	1910127	947	1909297	30	4.09801	trChip_vs_input_peak_1020
scaffold_154	243920	244565	646	244146	30	4.09801	trChip_vs_input_peak_1114
scaffold_395	150141	150895	755	150359	30	4.09801	trChip_vs_input_peak_3821
scaffold_60	2876226	2876636	411	2876412	30	4.09801	trChip_vs_input_peak_5229
scaffold_91	471213	471893	681	471317	30	4.09801	trChip_vs_input_peak_6537
scaffold_135	1881314	1881630	317	1881445	23	4.09682	trChip_vs_input_peak_843
scaffold_188	959148	959665	518	959253	23	4.09682	trChip_vs_input_peak_1569
scaffold_196	1556601	1556983	383	1556774	23	4.09682	trChip_vs_input_peak_1652
scaffold_211	621139	621999	861	621307	23	4.09682	trChip_vs_input_peak_1864

scaffold_256	548466	548722	257	548579	23	4.09682	trChip_vs_input_peak_2369
scaffold_281	1316992	1317310	319	1317147	23	4.09682	trChip_vs_input_peak_2697
scaffold_325	1176677	1176928	252	1176846	23	4.09682	trChip_vs_input_peak_3181
scaffold_349	321791	322343	553	321861	23	4.09682	trChip_vs_input_peak_3381
scaffold_367	733515	733833	319	733666	23	4.09682	trChip_vs_input_peak_3543
scaffold_38	413795	414139	345	413905	23	4.09682	trChip_vs_input_peak_3687
scaffold_41	3567944	3568349	406	3568153	23	4.09682	trChip_vs_input_peak_3988
scaffold_42	438497	438753	257	438612	23	4.09682	trChip_vs_input_peak_4068
scaffold_51	2322286	2322533	248	2322337	23	4.09682	trChip_vs_input_peak_4730
scaffold_5864	2756	3008	253	2917	23	4.09682	trChip_vs_input_peak_5134
scaffold_599	481141	481402	262	481235	23	4.09682	trChip_vs_input_peak_5187
scaffold_605	640267	640608	342	640514	23	4.09682	trChip_vs_input_peak_5249
scaffold_709	142797	143193	397	142978	23	4.09682	trChip_vs_input_peak_5789
scaffold_76	2626053	2626537	485	2626228	23	4.09682	trChip_vs_input_peak_5987
scaffold_761	46640	46942	303	46851	23	4.09682	trChip_vs_input_peak_6010
scaffold_792	135048	135428	381	135205	23	4.09682	trChip_vs_input_peak_6130
scaffold_814	43152	43573	422	43428	23	4.09682	trChip_vs_input_peak_6220
scaffold_900	237177	237572	396	237405	23	4.09682	trChip_vs_input_peak_6515
scaffold_109	1096474	1096749	276	1096600	18	4.0916	trChip_vs_input_peak_299
scaffold_148	1446466	1446861	396	1446645	18	4.0916	trChip_vs_input_peak_1028
scaffold_1759	9261	9748	488	9298	18	4.0916	trChip_vs_input_peak_1442
scaffold_210	1250674	1251085	412	1250898	18	4.0916	trChip_vs_input_peak_1859
scaffold_377	215085	215371	287	215280	18	4.0916	trChip_vs_input_peak_3673
scaffold_378	730513	730786	274	730670	18	4.0916	trChip_vs_input_peak_3680
scaffold_380	724504	724841	338	724652	18	4.0916	trChip_vs_input_peak_3732
scaffold_494	331382	331650	269	331567	18	4.0916	trChip_vs_input_peak_4612
scaffold_504	245672	246044	373	245829	18	4.0916	trChip_vs_input_peak_4698
scaffold_528	782815	783122	308	782965	18	4.0916	trChip_vs_input_peak_4814
scaffold_53	1041775	1042424	650	1042229	18	4.0916	trChip_vs_input_peak_4831
scaffold_639	257485	257773	289	257558	18	4.0916	trChip_vs_input_peak_5375
scaffold_27	2195735	2196065	331	2195874	34	4.08706	trChip_vs_input_peak_2530
scaffold_438	145446	145866	421	145659	34	4.08706	trChip_vs_input_peak_4201
scaffold_3	4296391	4296742	352	4296598	27	4.08693	trChip_vs_input_peak_2888
scaffold_472	363068	363454	387	363278	27	4.08693	trChip_vs_input_peak_4439
scaffold_65	1428440	1428762	323	1428571	27	4.08693	trChip_vs_input_peak_5458
scaffold_78	1365328	1365597	270	1365466	27	4.08693	trChip_vs_input_peak_6073
scaffold_250	292033	292309	277	292117	20	4.08673	trChip_vs_input_peak_2306
scaffold_27	3201729	3202050	322	3201838	20	4.08673	trChip_vs_input_peak_2544
scaffold_304	780711	780998	288	780790	20	4.08673	trChip_vs_input_peak_2980
scaffold_45	1097659	1097994	336	1097848	20	4.08673	trChip_vs_input_peak_4302

scaffold_474	40744	41036	293	40919	20	4.08673	trChip_vs_input_peak_4449
scaffold_567	566639	566927	289	566723	20	4.08673	trChip_vs_input_peak_5036
scaffold_57	1886016	1886396	381	1886204	20	4.08673	trChip_vs_input_peak_5049
scaffold_821	335160	335481	322	335223	20	4.08673	trChip_vs_input_peak_6257
scaffold_14	2636609	2636947	339	2636834	13	4.08632	trChip_vs_input_peak_907
scaffold_239	1632652	1632900	249	1632878	13	4.08632	trChip_vs_input_peak_2179
scaffold_5	2367712	2368054	343	2367729	13	4.08632	trChip_vs_input_peak_4648
scaffold_724	283089	283334	246	283141	13	4.08632	trChip_vs_input_peak_5854
scaffold_830	132766	133069	304	132973	13	4.08632	trChip_vs_input_peak_6303
scaffold_98	357717	357951	235	357760	13	4.08632	trChip_vs_input_peak_6712
scaffold_10	851049	851283	235	851159	13	4.0827	trChip_vs_input_peak_50
scaffold_1034	101843	102133	291	101987	13	4.0827	trChip_vs_input_peak_150
scaffold_1089	87782	88016	235	87876	13	4.0827	trChip_vs_input_peak_286
scaffold_122	2461922	2462156	235	2461999	13	4.0827	trChip_vs_input_peak_607
scaffold_130	585339	585573	235	585530	13	4.0827	trChip_vs_input_peak_742
scaffold_19136	1365	1634	270	1569	13	4.0827	trChip_vs_input_peak_1628
scaffold_195	289607	289841	235	289623	13	4.0827	trChip_vs_input_peak_1642
scaffold_333	110547	110797	251	110678	13	4.0827	trChip_vs_input_peak_3240
scaffold_374	693194	693476	283	693330	13	4.0827	trChip_vs_input_peak_3642
scaffold_457	39451	39880	430	39649	13	4.0827	trChip_vs_input_peak_4341
scaffold_848	147979	148222	244	148100	13	4.0827	trChip_vs_input_peak_6341
scaffold_853	171493	171755	263	171619	13	4.0827	trChip_vs_input_peak_6373
scaffold_308	834720	834985	266	834815	31	4.0764	trChip_vs_input_peak_3003
scaffold_46	750652	751149	498	750974	31	4.0764	trChip_vs_input_peak_4355
scaffold_1	1795666	1796232	567	1795850	24	4.07328	trChip_vs_input_peak_12
scaffold_160	1487905	1488217	313	1488066	24	4.07328	trChip_vs_input_peak_1241
scaffold_238	269750	270019	270	269885	24	4.07328	trChip_vs_input_peak_2165
scaffold_262	448144	448473	330	448255	24	4.07328	trChip_vs_input_peak_2436
scaffold_326	1050372	1051346	975	1050666	24	4.07328	trChip_vs_input_peak_3187
scaffold_484	856484	856822	339	856657	24	4.07328	trChip_vs_input_peak_4544
scaffold_5	5893917	5894192	276	5894079	24	4.07328	trChip_vs_input_peak_4656
scaffold_637	373951	374282	332	374146	24	4.07328	trChip_vs_input_peak_5370
scaffold_64	571907	572188	282	572013	24	4.07328	trChip_vs_input_peak_5381
scaffold_855	115073	115424	352	115277	24	4.07328	trChip_vs_input_peak_6377
scaffold_93	580363	580604	242	580457	14	4.07283	trChip_vs_input_peak_6594
scaffold_384	332437	332932	496	332790	18	4.07058	trChip_vs_input_peak_3756
scaffold_105	1678583	1678865	283	1678759	17	4.06776	trChip_vs_input_peak_171
scaffold_133	853428	853662	235	853537	17	4.06776	trChip_vs_input_peak_798
scaffold_2	4293074	4293361	288	4293183	17	4.06776	trChip_vs_input_peak_1708
scaffold_279	336313	336576	264	336477	17	4.06776	trChip_vs_input_peak_2619

scaffold_28	3857373	3857837	465	3857756	17	4.06776	trChip_vs_input_peak_2662
scaffold_37	1873108	1873403	296	1873249	17	4.06776	trChip_vs_input_peak_3590
scaffold_48	1402453	1402752	300	1402651	17	4.06776	trChip_vs_input_peak_4510
scaffold_84	1271	1762	492	1360	17	4.06776	trChip_vs_input_peak_6322
scaffold_97	939745	940051	307	939839	17	4.06776	trChip_vs_input_peak_6693
scaffold_33	3615190	3615643	454	3615305	16	4.06462	trChip_vs_input_peak_3225
scaffold_560	493284	493751	468	493547	24	4.06383	trChip_vs_input_peak_5001
scaffold_130	2110499	2110918	420	2110648	28	4.0636	trChip_vs_input_peak_762
scaffold_30	1639584	1640003	420	1639710	28	4.0636	trChip_vs_input_peak_2923
scaffold_37	3442656	3443118	463	3442766	28	4.0636	trChip_vs_input_peak_3605
scaffold_469	821662	822093	432	821977	28	4.0636	trChip_vs_input_peak_4403
scaffold_599	607645	607891	247	607728	28	4.0636	trChip_vs_input_peak_5189
scaffold_599	656648	657276	629	656837	28	4.0636	trChip_vs_input_peak_5191
scaffold_671	203865	204312	448	203987	28	4.0636	trChip_vs_input_peak_5575
scaffold_108	2698867	2699316	450	2699094	45	4.06228	trChip_vs_input_peak_268
scaffold_34	2051581	2051989	409	2051861	45	4.06228	trChip_vs_input_peak_3321
scaffold_10	2207941	2208242	302	2208121	39	4.06173	trChip_vs_input_peak_52
scaffold_11	644647	644987	341	644817	19	4.06131	trChip_vs_input_peak_319
scaffold_303	785892	786151	260	785980	18	4.05817	trChip_vs_input_peak_2970
scaffold_466	517324	517810	487	517408	32	4.0563	trChip_vs_input_peak_4388
scaffold_113	1754596	1754896	301	1754697	21	4.05604	trChip_vs_input_peak_429
scaffold_188	1771817	1772157	341	1771963	21	4.05604	trChip_vs_input_peak_1575
scaffold_274	1233463	1233950	488	1233729	21	4.05604	trChip_vs_input_peak_2582
scaffold_341	56745	56984	240	56891	21	4.05604	trChip_vs_input_peak_3342
scaffold_404	18074	18308	235	18210	21	4.05604	trChip_vs_input_peak_3939
scaffold_603	181740	182004	265	181828	21	4.05604	trChip_vs_input_peak_5239
scaffold_740	87523	87793	271	87604	21	4.05604	trChip_vs_input_peak_5917
scaffold_1436	10663	11388	726	10955	40	4.05574	trChip_vs_input_peak_961
scaffold_189	1810218	1810832	615	1810648	40	4.05574	trChip_vs_input_peak_1588
scaffold_340	658702	659229	528	659023	40	4.05574	trChip_vs_input_peak_3338
scaffold_38	1978592	1978955	364	1978839	40	4.05574	trChip_vs_input_peak_3705
scaffold_550	481773	482074	302	481920	40	4.05574	trChip_vs_input_peak_4957
scaffold_704	283880	284568	689	284253	40	4.05574	trChip_vs_input_peak_5777
scaffold_794	345306	346440	1135	345586	40	4.05574	trChip_vs_input_peak_6141
scaffold_1058	194019	194272	254	194123	10	4.05527	trChip_vs_input_peak_195
scaffold_197	1276169	1276403	235	1276242	10	4.05527	trChip_vs_input_peak_1655
scaffold_97	1964407	1964695	289	1964560	10	4.05527	trChip_vs_input_peak_6699
scaffold_427	322826	323160	335	322985	16	4.0508	trChip_vs_input_peak_4135
scaffold_10	4371956	4372190	235	4372063	25	4.04797	trChip_vs_input_peak_64
scaffold_54	1384001	1384355	355	1384202	25	4.04797	trChip_vs_input_peak_4879

scaffold_806	300696	300958	263	300807	25	4.04797	trChip_vs_input_peak_6194
scaffold_87	2482994	2483287	294	2483168	25	4.04797	trChip_vs_input_peak_6420
scaffold_98	1520689	1521068	380	1520910	25	4.04797	trChip_vs_input_peak_6715
scaffold_1008	42119	42426	308	42219	35	4.04741	trChip_vs_input_peak_78
scaffold_132	636886	637372	487	637112	35	4.04741	trChip_vs_input_peak_786
scaffold_15	1434672	1435106	435	1434828	35	4.04741	trChip_vs_input_peak_1053
scaffold_296	75005	75420	416	75243	35	4.04741	trChip_vs_input_peak_2839
scaffold_333	841129	841498	370	841325	35	4.04741	trChip_vs_input_peak_3244
scaffold_361	655238	655669	432	655383	35	4.04741	trChip_vs_input_peak_3501
scaffold_45	2554757	2555031	275	2554926	35	4.04741	trChip_vs_input_peak_4311
scaffold_49	1664811	1665162	352	1664961	35	4.04741	trChip_vs_input_peak_4574
scaffold_5012	7104	7409	306	7269	35	4.04741	trChip_vs_input_peak_4681
scaffold_543	692443	693026	584	692820	35	4.04741	trChip_vs_input_peak_4908
scaffold_546	493395	493921	527	493731	35	4.04741	trChip_vs_input_peak_4922
scaffold_55	3021938	3022361	424	3022085	35	4.04741	trChip_vs_input_peak_4953
scaffold_65	282551	282926	376	282715	35	4.04741	trChip_vs_input_peak_5445
scaffold_69	1479173	1479651	479	1479387	35	4.04741	trChip_vs_input_peak_5675
scaffold_76	2353571	2354341	771	2354099	35	4.04741	trChip_vs_input_peak_5971
scaffold_86	2283558	2283838	281	2283668	35	4.04741	trChip_vs_input_peak_6388
scaffold_97	536763	537090	328	536889	35	4.04741	trChip_vs_input_peak_6689
scaffold_503	291788	292114	327	291946	23	4.04193	trChip_vs_input_peak_4687
scaffold_12	4757018	4757268	251	4757093	14	4.04151	trChip_vs_input_peak_555
scaffold_426	532713	532959	247	532827	14	4.04151	trChip_vs_input_peak_4117
scaffold_1	3994972	3995463	492	3995353	30	4.03644	trChip_vs_input_peak_17
scaffold_105	2004062	2004357	296	2004226	30	4.03644	trChip_vs_input_peak_177
scaffold_105	2226873	2227228	356	2227084	30	4.03644	trChip_vs_input_peak_179
scaffold_105	2680314	2680607	294	2680428	30	4.03644	trChip_vs_input_peak_186
scaffold_111	2596038	2596391	354	2596209	30	4.03644	trChip_vs_input_peak_384
scaffold_122	650729	651640	912	651486	30	4.03644	trChip_vs_input_peak_594
scaffold_137	1973771	1974014	244	1973903	30	4.03644	trChip_vs_input_peak_867
scaffold_345	544290	544655	366	544524	30	4.03644	trChip_vs_input_peak_3368
scaffold_382	1144647	1145249	603	1144866	30	4.03644	trChip_vs_input_peak_3747
scaffold_44	753347	754216	870	753639	30	4.03644	trChip_vs_input_peak_4216
scaffold_44	3223868	3224215	348	3224020	30	4.03644	trChip_vs_input_peak_4238
scaffold_473	536027	536408	382	536206	30	4.03644	trChip_vs_input_peak_4445
scaffold_48	165420	165972	553	165637	30	4.03644	trChip_vs_input_peak_4506
scaffold_586	199055	199667	613	199177	30	4.03644	trChip_vs_input_peak_5126
scaffold_686	272668	273123	456	272784	30	4.03644	trChip_vs_input_peak_5643
scaffold_709	359079	359517	439	359285	30	4.03644	trChip_vs_input_peak_5791
scaffold_786	273114	273917	804	273706	30	4.03644	trChip_vs_input_peak_6110

scaffold_81	2715011	2715780	770	2715584	30	4.03644	trChip_vs_input_peak_6211
scaffold_106	1024141	1024375	235	1024305	13	4.03588	trChip_vs_input_peak_207
scaffold_1084	75644	75961	318	75763	18	4.03358	trChip_vs_input_peak_278
scaffold_171	481885	482257	373	482076	18	4.03358	trChip_vs_input_peak_1366
scaffold_559	753274	753598	325	753383	18	4.03358	trChip_vs_input_peak_4976
scaffold_96	1982855	1983095	241	1982919	18	4.03358	trChip_vs_input_peak_6678
scaffold_97	993601	993853	253	993756	18	4.03358	trChip_vs_input_peak_6695
scaffold_112	2326506	2326742	237	2326648	22	4.02843	trChip_vs_input_peak_405
scaffold_15	4912993	4913298	306	4913251	22	4.02843	trChip_vs_input_peak_1065
scaffold_41	2062737	2063173	437	2063045	22	4.02843	trChip_vs_input_peak_3980
scaffold_1068	108156	108497	342	108379	26	4.02481	trChip_vs_input_peak_221
scaffold_132	693046	693528	483	693257	26	4.02481	trChip_vs_input_peak_787
scaffold_149	1347114	1347377	264	1347287	26	4.02481	trChip_vs_input_peak_1038
scaffold_173	196446	197191	746	196868	26	4.02481	trChip_vs_input_peak_1384
scaffold_225	861210	861654	445	861466	26	4.02481	trChip_vs_input_peak_2042
scaffold_366	1123297	1123579	283	1123485	26	4.02481	trChip_vs_input_peak_3536
scaffold_416	49126	49492	367	49295	26	4.02481	trChip_vs_input_peak_4033
scaffold_83	2415288	2415977	690	2415765	47	4.02314	trChip_vs_input_peak_6295
scaffold_111	2555922	2556421	500	2556195	30	4.02213	trChip_vs_input_peak_383
scaffold_256	24354	24734	381	24613	30	4.02213	trChip_vs_input_peak_2364
scaffold_85	1729877	1730137	261	1729998	30	4.02213	trChip_vs_input_peak_6353
scaffold_105	78723	79027	305	78902	25	4.02135	trChip_vs_input_peak_165
scaffold_122	2242347	2242615	269	2242480	25	4.02135	trChip_vs_input_peak_605
scaffold_1340	46342	46713	372	46533	25	4.02135	trChip_vs_input_peak_826
scaffold_14	5425557	5425994	438	5425789	25	4.02135	trChip_vs_input_peak_920
scaffold_206	1760055	1760718	664	1760559	25	4.02135	trChip_vs_input_peak_1802
scaffold_229	1606164	1606611	448	1606429	25	4.02135	trChip_vs_input_peak_2086
scaffold_23	2816159	2816511	353	2816306	25	4.02135	trChip_vs_input_peak_2092
scaffold_2501	10276	10551	276	10353	25	4.02135	trChip_vs_input_peak_2325
scaffold_265	1449718	1450114	397	1449976	25	4.02135	trChip_vs_input_peak_2467
scaffold_267	1551384	1552034	651	1551855	25	4.02135	trChip_vs_input_peak_2491
scaffold_293	147779	148070	292	147864	25	4.02135	trChip_vs_input_peak_2813
scaffold_340	578711	578948	238	578821	25	4.02135	trChip_vs_input_peak_3336
scaffold_432	913045	913464	420	913255	25	4.02135	trChip_vs_input_peak_4184
scaffold_535	762791	763035	245	762894	25	4.02135	trChip_vs_input_peak_4860
scaffold_71	814735	815930	1196	814984	25	4.02135	trChip_vs_input_peak_5802
scaffold_90	2217437	2217870	434	2217681	25	4.02135	trChip_vs_input_peak_6506
scaffold_908	11000	11602	603	11423	25	4.02135	trChip_vs_input_peak_6526
scaffold_911	194018	194269	252	194223	25	4.02135	trChip_vs_input_peak_6554
scaffold_311	802113	802525	413	802318	34	4.02006	trChip_vs_input_peak_3065

scaffold_211	1627566	1628038	473	1627693	19	4.01477	trChip_vs_input_peak_1871
scaffold_398	111427	112067	641	111616	42	4.01254	trChip_vs_input_peak_3844
scaffold_338	1270045	1270361	317	1270271	14	4.01066	trChip_vs_input_peak_3292
scaffold_284	1019049	1019375	327	1019206	16	4.00989	trChip_vs_input_peak_2721
scaffold_1	1267274	1268706	1433	1268428	31	4.00361	trChip_vs_input_peak_8
scaffold_1079	92936	94305	1370	93489	31	4.00361	trChip_vs_input_peak_246
scaffold_262	232378	232678	301	232597	31	4.00361	trChip_vs_input_peak_2432
scaffold_13	3724232	3724805	574	3724372	27	4.00354	trChip_vs_input_peak_738
scaffold_183	22656	22936	281	22788	27	4.00354	trChip_vs_input_peak_1537
scaffold_30	2190311	2190768	458	2190594	27	4.00354	trChip_vs_input_peak_2932
scaffold_419	987087	988038	952	987538	27	4.00354	trChip_vs_input_peak_4062
scaffold_88	1233733	1234065	333	1233951	27	4.00354	trChip_vs_input_peak_6449
scaffold_92	2513491	2513779	289	2513716	27	4.00354	trChip_vs_input_peak_6574
scaffold_217	303111	303658	548	303486	23	4.00344	trChip_vs_input_peak_1902
scaffold_292	1359081	1359315	235	1359177	23	4.00344	trChip_vs_input_peak_2811
scaffold_3	1895518	1895771	254	1895625	23	4.00344	trChip_vs_input_peak_2878
scaffold_34	1791325	1791673	349	1791464	23	4.00344	trChip_vs_input_peak_3318
scaffold_359	207991	208446	456	208146	23	4.00344	trChip_vs_input_peak_3475
scaffold_582	395424	395745	322	395513	23	4.00344	trChip_vs_input_peak_5117
scaffold_99	447142	447483	342	447311	23	4.00344	trChip_vs_input_peak_6730
scaffold_262	1560511	1560853	343	1560798	19	4.0033	trChip_vs_input_peak_2443
scaffold_32	340915	341173	259	341076	19	4.0033	trChip_vs_input_peak_3123
scaffold_356	691088	691392	305	691294	19	4.0033	trChip_vs_input_peak_3465
scaffold_508	406349	406592	244	406473	19	4.0033	trChip_vs_input_peak_4719
scaffold_70	1849644	1849882	239	1849713	19	4.0033	trChip_vs_input_peak_5758
scaffold_163	853940	854174	235	854144	15	4.0031	trChip_vs_input_peak_1268
scaffold_213	826334	826568	235	826522	15	4.0031	trChip_vs_input_peak_1881
scaffold_263	425756	426056	301	425967	15	4.0031	trChip_vs_input_peak_2448
scaffold_431	516652	516940	289	516839	15	4.0031	trChip_vs_input_peak_4180
scaffold_486	355661	355930	270	355753	15	4.0031	trChip_vs_input_peak_4549
scaffold_52	667834	668068	235	667882	15	4.0031	trChip_vs_input_peak_4785
scaffold_63	1551555	1551935	381	1551724	15	4.0031	trChip_vs_input_peak_5339
scaffold_80	2020171	2020466	296	2020270	15	4.0031	trChip_vs_input_peak_6180
scaffold_102	51560	51805	246	51724	20	3.99929	trChip_vs_input_peak_117
scaffold_1193	57684	57956	273	57758	20	3.99929	trChip_vs_input_peak_529
scaffold_126	246426	246723	298	246625	20	3.99929	trChip_vs_input_peak_670
scaffold_132	122908	123250	343	123049	20	3.99929	trChip_vs_input_peak_779
scaffold_150	1248780	1249035	256	1248938	20	3.99929	trChip_vs_input_peak_1067
scaffold_189	1395440	1395747	308	1395657	20	3.99929	trChip_vs_input_peak_1586
scaffold_191	1765462	1765696	235	1765575	20	3.99929	trChip_vs_input_peak_1626

scaffold_37	161078	161316	239	161175	20	3.99929	trChip_vs_input_peak_3567
scaffold_38	1182555	1183122	568	1182747	20	3.99929	trChip_vs_input_peak_3699
scaffold_384	330297	330565	269	330487	20	3.99929	trChip_vs_input_peak_3754
scaffold_448	226529	227100	572	226671	20	3.99929	trChip_vs_input_peak_4278
scaffold_448	546531	546995	465	546762	20	3.99929	trChip_vs_input_peak_4283
scaffold_515	432193	432582	390	432389	20	3.99929	trChip_vs_input_peak_4757
scaffold_7465	842	1095	254	878	20	3.99929	trChip_vs_input_peak_5930
scaffold_757	230327	230707	381	230544	20	3.99929	trChip_vs_input_peak_5959
scaffold_87	1212040	1212353	314	1212212	20	3.99929	trChip_vs_input_peak_6416
scaffold_99	2306481	2306715	235	2306516	20	3.99929	trChip_vs_input_peak_6740
scaffold_1	4554736	4556026	1291	4555530	37	3.99922	trChip_vs_input_peak_20
scaffold_119	2541583	2541856	274	2541684	37	3.99922	trChip_vs_input_peak_528
scaffold_243	1376020	1376502	483	1376272	37	3.99922	trChip_vs_input_peak_2219
scaffold_571	261447	262003	557	261678	37	3.99922	trChip_vs_input_peak_5058
scaffold_604	588843	589210	368	589057	37	3.99922	trChip_vs_input_peak_5245
scaffold_866	103193	103549	357	103354	20	3.9979	trChip_vs_input_peak_6409
scaffold_37	1657608	1657870	263	1657722	18	3.99725	trChip_vs_input_peak_3577
scaffold_129	1039271	1040858	1588	1040517	21	3.99301	trChip_vs_input_peak_713
scaffold_93	828658	829302	645	828850	21	3.99301	trChip_vs_input_peak_6595
scaffold_284	1002401	1002939	539	1002751	15	3.98885	trChip_vs_input_peak_2718
scaffold_181	1326364	1326931	568	1326790	36	3.98828	trChip_vs_input_peak_1529
scaffold_4	407860	408624	765	408312	49	3.9878	trChip_vs_input_peak_3869
scaffold_17	3498912	3499507	596	3499236	20	3.98707	trChip_vs_input_peak_1350
scaffold_370	117638	117872	235	117805	13	3.98668	trChip_vs_input_peak_3609
scaffold_319	1187492	1187806	315	1187610	32	3.98637	trChip_vs_input_peak_3121
scaffold_69	1062423	1062788	366	1062636	32	3.98637	trChip_vs_input_peak_5668
scaffold_248	941498	941844	347	941678	18	3.98528	trChip_vs_input_peak_2277
scaffold_80	332606	332889	284	332708	18	3.98528	trChip_vs_input_peak_6174
scaffold_11	319517	319799	283	319635	28	3.98394	trChip_vs_input_peak_317
scaffold_427	534747	535112	366	534887	28	3.98394	trChip_vs_input_peak_4143
scaffold_6	4871425	4871690	266	4871536	28	3.98394	trChip_vs_input_peak_5209
scaffold_10	173492	174211	720	173612	32	3.98199	trChip_vs_input_peak_46
scaffold_124	2527282	2529568	2287	2528280	32	3.98199	trChip_vs_input_peak_644
scaffold_132	186423	187279	857	186838	32	3.98199	trChip_vs_input_peak_780
scaffold_145	764354	764673	320	764549	32	3.98199	trChip_vs_input_peak_985
scaffold_191	53052	53768	717	53469	32	3.98199	trChip_vs_input_peak_1613
scaffold_417	249255	249583	329	249426	32	3.98199	trChip_vs_input_peak_4048
scaffold_42	2539704	2540374	671	2539788	32	3.98199	trChip_vs_input_peak_4087
scaffold_440	777930	778193	264	778043	32	3.98199	trChip_vs_input_peak_4245
scaffold_648	572810	573289	480	573084	32	3.98199	trChip_vs_input_peak_5430

scaffold_80	2001516	2001897	382	2001736	32	3.98199	trChip_vs_input_peak_6179
scaffold_268	620459	621074	616	620843	24	3.98072	trChip_vs_input_peak_2492
scaffold_495	126908	127142	235	127036	24	3.98072	trChip_vs_input_peak_4619
scaffold_7	2958307	2958615	309	2958449	24	3.98072	trChip_vs_input_peak_5734
scaffold_722	274840	275092	253	275004	24	3.98072	trChip_vs_input_peak_5845
scaffold_958	120791	121231	441	120936	24	3.98072	trChip_vs_input_peak_6658
scaffold_230	1127435	1127669	235	1127617	12	3.97665	trChip_vs_input_peak_2113
scaffold_122	814877	815258	382	815088	20	3.9763	trChip_vs_input_peak_598
scaffold_154	887792	888026	235	887899	20	3.9763	trChip_vs_input_peak_1124
scaffold_261	952080	952356	277	952194	20	3.9763	trChip_vs_input_peak_2427
scaffold_3	5463360	5463651	292	5463504	20	3.9763	trChip_vs_input_peak_2898
scaffold_376	601539	601876	338	601715	20	3.9763	trChip_vs_input_peak_3654
scaffold_53	104406	105211	806	105082	20	3.9763	trChip_vs_input_peak_4829
scaffold_583	563771	564028	258	563890	20	3.9763	trChip_vs_input_peak_5121
scaffold_6	4166409	4166655	247	4166545	20	3.9763	trChip_vs_input_peak_5205
scaffold_82	363518	364159	642	363900	44	3.97397	trChip_vs_input_peak_6235
scaffold_390	854306	854780	475	854585	33	3.97028	trChip_vs_input_peak_3802
scaffold_26	618059	618583	525	618490	16	3.9698	trChip_vs_input_peak_2399
scaffold_80	2404423	2404708	286	2404587	16	3.9698	trChip_vs_input_peak_6184
scaffold_893	82740	82983	244	82842	16	3.9698	trChip_vs_input_peak_6487
scaffold_106	616900	617142	243	617017	29	3.96581	trChip_vs_input_peak_201
scaffold_188	1298941	1299506	566	1299305	29	3.96581	trChip_vs_input_peak_1573
scaffold_88	40407	40694	288	40604	29	3.96581	trChip_vs_input_peak_6438
scaffold_96	2041327	2041582	256	2041458	17	3.96545	trChip_vs_input_peak_6680
scaffold_14	5117528	5117831	304	5117622	15	3.96395	trChip_vs_input_peak_918
scaffold_222	895519	895779	261	895655	15	3.96395	trChip_vs_input_peak_2011
scaffold_230	1165452	1165739	288	1165564	15	3.96395	trChip_vs_input_peak_2114
scaffold_284	1060369	1060635	267	1060565	15	3.96395	trChip_vs_input_peak_2726
scaffold_364	102831	103065	235	102994	15	3.96395	trChip_vs_input_peak_3518
scaffold_38	2909751	2909988	238	2909889	15	3.96395	trChip_vs_input_peak_3716
scaffold_560	254676	255132	457	254851	15	3.96395	trChip_vs_input_peak_4986
scaffold_622	332031	332285	255	332207	15	3.96395	trChip_vs_input_peak_5317
scaffold_7	3054072	3054334	263	3054124	15	3.96395	trChip_vs_input_peak_5737
scaffold_77	973481	973715	235	973551	15	3.96395	trChip_vs_input_peak_6024
scaffold_77	1813902	1814232	331	1814073	15	3.96395	trChip_vs_input_peak_6030
scaffold_97	806343	806754	412	806494	15	3.96067	trChip_vs_input_peak_6691
scaffold_166	612535	612888	354	612709	25	3.95998	trChip_vs_input_peak_1298
scaffold_23	3391897	3392180	284	3392071	25	3.95998	trChip_vs_input_peak_2097
scaffold_260	145725	146001	277	145845	25	3.95998	trChip_vs_input_peak_2412
scaffold_42	1089973	1090408	436	1090087	25	3.95998	trChip_vs_input_peak_4072

scaffold_58	17537	17897	361	17796	25	3.95998	trChip_vs_input_peak_5080
scaffold_14	263043	263277	235	263178	12	3.95936	trChip_vs_input_peak_901
scaffold_283	811640	811952	313	811795	12	3.95936	trChip_vs_input_peak_2714
scaffold_344	307369	307640	272	307486	12	3.95936	trChip_vs_input_peak_3359
scaffold_48	1862887	1863121	235	1863060	12	3.95936	trChip_vs_input_peak_4516
scaffold_101	1035335	1035822	488	1035632	27	3.95885	trChip_vs_input_peak_87
scaffold_179	1438616	1439381	766	1439040	27	3.95885	trChip_vs_input_peak_1493
scaffold_189	1876973	1878049	1077	1877283	27	3.95885	trChip_vs_input_peak_1595
scaffold_205	1833060	1833342	283	1833186	27	3.95885	trChip_vs_input_peak_1796
scaffold_207	675554	676245	692	676013	27	3.95885	trChip_vs_input_peak_1816
scaffold_237	239790	240135	346	239944	27	3.95885	trChip_vs_input_peak_2156
scaffold_240	1281338	1281634	297	1281567	27	3.95885	trChip_vs_input_peak_2189
scaffold_256	356980	357340	361	357130	27	3.95885	trChip_vs_input_peak_2367
scaffold_266	394753	395535	783	394863	27	3.95885	trChip_vs_input_peak_2472
scaffold_355	975766	976113	348	975981	27	3.95885	trChip_vs_input_peak_3450
scaffold_355	1027976	1028338	363	1028118	27	3.95885	trChip_vs_input_peak_3452
scaffold_367	739119	740110	992	739548	27	3.95885	trChip_vs_input_peak_3545
scaffold_370	623469	624042	574	623875	27	3.95885	trChip_vs_input_peak_3611
scaffold_410	987793	988091	299	987965	27	3.95885	trChip_vs_input_peak_4002
scaffold_43	3143350	3143780	431	3143553	27	3.95885	trChip_vs_input_peak_4170
scaffold_608	401449	402046	598	401825	27	3.95885	trChip_vs_input_peak_5256
scaffold_609	325372	325892	521	325611	27	3.95885	trChip_vs_input_peak_5258
scaffold_670	216068	216456	389	216340	27	3.95885	trChip_vs_input_peak_5562
scaffold_887	1291	1669	379	1489	27	3.95885	trChip_vs_input_peak_6466
scaffold_917	262968	263242	275	263132	27	3.95885	trChip_vs_input_peak_6561
scaffold_159	1169047	1169691	645	1169269	39	3.95682	trChip_vs_input_peak_1202
scaffold_277	623690	624011	322	623803	39	3.95682	trChip_vs_input_peak_2602
scaffold_4	2345806	2346252	447	2346022	39	3.95682	trChip_vs_input_peak_3873
scaffold_253	45493	45925	433	45661	51	3.95572	trChip_vs_input_peak_2350
scaffold_4951	328	730	403	553	51	3.95572	trChip_vs_input_peak_4624
scaffold_100	1735295	1735680	386	1735542	34	3.95523	trChip_vs_input_peak_75
scaffold_172	964388	964784	397	964566	34	3.95523	trChip_vs_input_peak_1380
scaffold_351	1161765	1162142	378	1161946	34	3.95523	trChip_vs_input_peak_3423
scaffold_560	349997	350529	533	350170	17	3.95302	trChip_vs_input_peak_4990
scaffold_11	4971863	4972232	370	4972048	21	3.95206	trChip_vs_input_peak_340
scaffold_1368	84101	84335	235	84261	21	3.95206	trChip_vs_input_peak_858
scaffold_1714	19181	19509	329	19353	21	3.95206	trChip_vs_input_peak_1377
scaffold_29	1808830	1809117	288	1808966	21	3.95206	trChip_vs_input_peak_2788
scaffold_335	1091120	1091459	340	1091305	21	3.95206	trChip_vs_input_peak_3266
scaffold_460	283182	283471	290	283314	21	3.95206	trChip_vs_input_peak_4361

scaffold_78	211396	211791	396	211628	21	3.95206	trChip_vs_input_peak_6070
scaffold_927	97674	97913	240	97797	21	3.95206	trChip_vs_input_peak_6591
scaffold_289	1333837	1334071	235	1333855	10	3.95133	trChip_vs_input_peak_2781
scaffold_3	1244502	1244959	458	1244749	30	3.94901	trChip_vs_input_peak_2873
scaffold_30	2415676	2416167	492	2415945	30	3.94901	trChip_vs_input_peak_2944
scaffold_546	494197	494711	515	494535	30	3.94901	trChip_vs_input_peak_4923
scaffold_509	393628	393862	235	393686	16	3.94352	trChip_vs_input_peak_4724
scaffold_10	5019892	5020173	282	5020064	26	3.94097	trChip_vs_input_peak_68
scaffold_154	494551	494809	259	494622	26	3.94097	trChip_vs_input_peak_1122
scaffold_256	1600200	1600627	428	1600395	26	3.94097	trChip_vs_input_peak_2376
scaffold_349	323086	323396	311	323253	26	3.94097	trChip_vs_input_peak_3382
scaffold_629	387834	388376	543	387991	26	3.94097	trChip_vs_input_peak_5334
scaffold_92	2374128	2374699	572	2374571	26	3.94097	trChip_vs_input_peak_6573
scaffold_1081	65959	66271	313	66063	17	3.94067	trChip_vs_input_peak_274
scaffold_1126	43057	43291	235	43092	17	3.94067	trChip_vs_input_peak_412
scaffold_167	1594379	1594622	244	1594496	17	3.94067	trChip_vs_input_peak_1316
scaffold_286	25952	26332	381	26086	17	3.94067	trChip_vs_input_peak_2743
scaffold_34	2264611	2264845	235	2264788	17	3.94067	trChip_vs_input_peak_3322
scaffold_419	125620	125915	296	125754	17	3.94067	trChip_vs_input_peak_4059
scaffold_65	2374795	2375048	254	2374938	17	3.94067	trChip_vs_input_peak_5459
scaffold_74	1498023	1498671	649	1498248	46	3.93933	trChip_vs_input_peak_5909
scaffold_28	1459035	1459312	278	1459080	13	3.93866	trChip_vs_input_peak_2649
scaffold_58	1862260	1862494	235	1862377	13	3.93866	trChip_vs_input_peak_5096
scaffold_1959	566	1170	605	849	144	3.93708	trChip_vs_input_peak_1647
scaffold_106	692278	693364	1087	692592	34	3.93498	trChip_vs_input_peak_202
scaffold_12	1631177	1631462	286	1631290	34	3.93498	trChip_vs_input_peak_536
scaffold_2	6462176	6462539	364	6462260	34	3.93498	trChip_vs_input_peak_1719
scaffold_285	872419	872911	493	872627	34	3.93498	trChip_vs_input_peak_2731
scaffold_3	3320053	3320447	395	3320244	34	3.93498	trChip_vs_input_peak_2884
scaffold_39	2262663	2263070	408	2262889	34	3.93498	trChip_vs_input_peak_3790
scaffold_475	510171	510678	508	510405	34	3.93498	trChip_vs_input_peak_4473
scaffold_68	1273886	1274446	561	1274094	34	3.93498	trChip_vs_input_peak_5613
scaffold_792	102517	103198	682	102723	34	3.93498	trChip_vs_input_peak_6128
scaffold_416	476955	477260	306	477085	31	3.93338	trChip_vs_input_peak_4042
scaffold_62	1648947	1649224	278	1649003	31	3.93338	trChip_vs_input_peak_5310
scaffold_395	1037196	1038130	935	1037471	21	3.9319	trChip_vs_input_peak_3826
scaffold_215	890873	891112	240	890977	22	3.93019	trChip_vs_input_peak_1893
scaffold_27	3193452	3193897	446	3193612	22	3.93019	trChip_vs_input_peak_2543
scaffold_447	367564	367842	279	367781	22	3.93019	trChip_vs_input_peak_4270
scaffold_448	474689	475093	405	474872	22	3.93019	trChip_vs_input_peak_4282

scaffold_529	734794	735275	482	734977	22	3.93019	trChip_vs_input_peak_4822
scaffold_645	471691	471965	275	471836	22	3.93019	trChip_vs_input_peak_5415
scaffold_42	1113445	1114013	569	1113645	36	3.92786	trChip_vs_input_peak_4073
scaffold_1	4250630	4250864	235	4250714	22	3.92612	trChip_vs_input_peak_19
scaffold_108	477269	477562	294	477432	22	3.92612	trChip_vs_input_peak_250
scaffold_1125	144132	144366	235	144276	22	3.92612	trChip_vs_input_peak_411
scaffold_154	394514	394748	235	394623	22	3.92612	trChip_vs_input_peak_1117
scaffold_154	843676	844155	480	843879	22	3.92612	trChip_vs_input_peak_1123
scaffold_16	1589341	1589810	470	1589627	22	3.92612	trChip_vs_input_peak_1223
scaffold_22	4816023	4816258	236	4816175	22	3.92612	trChip_vs_input_peak_1980
scaffold_284	1003662	1004541	880	1004446	22	3.92612	trChip_vs_input_peak_2719
scaffold_354	1211668	1212061	394	1211876	22	3.92612	trChip_vs_input_peak_3443
scaffold_37	1703704	1704215	512	1703929	22	3.92612	trChip_vs_input_peak_3578
scaffold_37	1744521	1745061	541	1744734	22	3.92612	trChip_vs_input_peak_3581
scaffold_4047	1231	1874	644	1573	22	3.92612	trChip_vs_input_peak_3945
scaffold_452	912531	912778	248	912750	22	3.92612	trChip_vs_input_peak_4328
scaffold_52	1824708	1825078	371	1824861	22	3.92612	trChip_vs_input_peak_4788
scaffold_656	380604	380848	245	380757	22	3.92612	trChip_vs_input_peak_5483
scaffold_6718	44	507	464	319	22	3.92612	trChip_vs_input_peak_5582
scaffold_697	357720	357986	267	357792	22	3.92612	trChip_vs_input_peak_5709
scaffold_722	279696	280236	541	280049	22	3.92612	trChip_vs_input_peak_5846
scaffold_724	337128	337620	493	337297	22	3.92612	trChip_vs_input_peak_5855
scaffold_733	67365	67843	479	67491	22	3.92612	trChip_vs_input_peak_5884
scaffold_9	3672216	3672463	248	3672257	22	3.92612	trChip_vs_input_peak_6495
scaffold_900	297858	298268	411	298124	22	3.92612	trChip_vs_input_peak_6517
scaffold_921	192070	192446	377	192263	22	3.92612	trChip_vs_input_peak_6581
scaffold_143	512661	512917	257	512808	27	3.92348	trChip_vs_input_peak_950
scaffold_15	5321970	5322268	299	5322113	27	3.92348	trChip_vs_input_peak_1066
scaffold_2	5972382	5972776	395	5972706	27	3.92348	trChip_vs_input_peak_1717
scaffold_37	2300084	2300421	338	2300213	27	3.92348	trChip_vs_input_peak_3599
scaffold_72	2816932	2817218	287	2817100	27	3.92348	trChip_vs_input_peak_5838
scaffold_235	1637900	1638148	249	1637989	13	3.92291	trChip_vs_input_peak_2150
scaffold_705	200244	200506	263	200367	13	3.92291	trChip_vs_input_peak_5778
scaffold_97	2733473	2733782	310	2733642	41	3.91922	trChip_vs_input_peak_6703
scaffold_3	4473878	4474258	381	4474075	32	3.91882	trChip_vs_input_peak_2893
scaffold_3	5582498	5582802	305	5582615	32	3.91882	trChip_vs_input_peak_2899
scaffold_59	14794	15067	274	14958	37	3.91539	trChip_vs_input_peak_5148
scaffold_107	1688907	1689339	433	1689286	18	3.91497	trChip_vs_input_peak_229
scaffold_21	1400695	1400948	254	1400786	18	3.91497	trChip_vs_input_peak_1843
scaffold_219	1070554	1070869	316	1070712	18	3.91497	trChip_vs_input_peak_1935

scaffold_322	542956	543229	274	543050	18	3.91497	trChip_vs_input_peak_3155
scaffold_355	270282	270555	274	270356	18	3.91497	trChip_vs_input_peak_3449
scaffold_37	1856228	1856486	259	1856293	18	3.91497	trChip_vs_input_peak_3586
scaffold_398	868802	869141	340	868909	18	3.91497	trChip_vs_input_peak_3849
scaffold_540	377357	377823	467	377575	18	3.91497	trChip_vs_input_peak_4896
scaffold_66	2233121	2233547	427	2233350	18	3.91497	trChip_vs_input_peak_5497
scaffold_129	1187146	1187578	433	1187346	23	3.91035	trChip_vs_input_peak_714
scaffold_135	96580	96854	275	96674	23	3.91035	trChip_vs_input_peak_832
scaffold_1501	54840	55119	280	54940	23	3.91035	trChip_vs_input_peak_1074
scaffold_1693	55356	56265	910	55425	23	3.91035	trChip_vs_input_peak_1332
scaffold_22	1912505	1912962	458	1912679	23	3.91035	trChip_vs_input_peak_1945
scaffold_304	501679	502038	360	501852	23	3.91035	trChip_vs_input_peak_2979
scaffold_31	2907985	2908299	315	2908072	23	3.91035	trChip_vs_input_peak_3034
scaffold_348	866527	866764	238	866577	23	3.91035	trChip_vs_input_peak_3377
scaffold_563	606297	606573	277	606403	23	3.91035	trChip_vs_input_peak_5022
scaffold_60	2952676	2952918	243	2952890	12	3.9084	trChip_vs_input_peak_5230
scaffold_184	1707119	1707639	521	1707321	48	3.90804	trChip_vs_input_peak_1549
scaffold_237	386581	387088	508	386787	48	3.90804	trChip_vs_input_peak_2158
scaffold_241	593196	593983	788	593715	28	3.90733	trChip_vs_input_peak_2194
scaffold_35	3156005	3156422	418	3156233	28	3.90733	trChip_vs_input_peak_3411
scaffold_542	563231	563593	363	563373	28	3.90733	trChip_vs_input_peak_4905
scaffold_610	19944	20252	309	20070	28	3.90733	trChip_vs_input_peak_5268
scaffold_101	2631064	2631321	258	2631174	29	3.90623	trChip_vs_input_peak_101
scaffold_118	1545493	1545886	394	1545702	29	3.90623	trChip_vs_input_peak_511
scaffold_121	1132921	1133339	419	1133149	29	3.90623	trChip_vs_input_peak_579
scaffold_1284	90002	90474	473	90226	29	3.90623	trChip_vs_input_peak_704
scaffold_14	957760	958669	910	958438	29	3.90623	trChip_vs_input_peak_902
scaffold_143	611674	612225	552	611993	29	3.90623	trChip_vs_input_peak_951
scaffold_171	1428080	1429180	1101	1428947	29	3.90623	trChip_vs_input_peak_1372
scaffold_189	995117	995410	294	995190	29	3.90623	trChip_vs_input_peak_1584
scaffold_2118	1472	1921	450	1651	29	3.90623	trChip_vs_input_peak_1873
scaffold_260	1267011	1267343	333	1267134	29	3.90623	trChip_vs_input_peak_2417
scaffold_263	572365	572662	298	572471	29	3.90623	trChip_vs_input_peak_2449
scaffold_293	528178	528773	596	528541	29	3.90623	trChip_vs_input_peak_2814
scaffold_34	904800	905182	383	904969	29	3.90623	trChip_vs_input_peak_3313
scaffold_34	1609611	1609955	345	1609703	29	3.90623	trChip_vs_input_peak_3317
scaffold_373	296829	297157	329	297015	29	3.90623	trChip_vs_input_peak_3632
scaffold_397	90950	91321	372	91089	29	3.90623	trChip_vs_input_peak_3840
scaffold_431	23116	23502	387	23341	29	3.90623	trChip_vs_input_peak_4175
scaffold_437	197758	198145	388	197952	29	3.90623	trChip_vs_input_peak_4198

scaffold_60	3166927	3167294	368	3167064	29	3.90623	trChip_vs_input_peak_5234
scaffold_640	225526	225792	267	225705	29	3.90623	trChip_vs_input_peak_5397
scaffold_6411	3499	3808	310	3606	29	3.90623	trChip_vs_input_peak_5407
scaffold_66	2560429	2560740	312	2560610	29	3.90623	trChip_vs_input_peak_5500
scaffold_72	2755749	2756139	391	2755938	29	3.90623	trChip_vs_input_peak_5836
scaffold_827	80199	80660	462	80516	29	3.90623	trChip_vs_input_peak_6273
scaffold_880	214049	214283	235	214144	29	3.90623	trChip_vs_input_peak_6457
scaffold_929	155255	155504	250	155335	29	3.90623	trChip_vs_input_peak_6593
scaffold_99	646269	646898	630	646370	29	3.90623	trChip_vs_input_peak_6731
scaffold_864	241590	241836	247	241819	10	3.89818	trChip_vs_input_peak_6405
scaffold_107	792164	792757	594	792598	36	3.89397	trChip_vs_input_peak_226
scaffold_1117	28122	28964	843	28565	36	3.89397	trChip_vs_input_peak_398
scaffold_145	812500	813006	507	812726	36	3.89397	trChip_vs_input_peak_986
scaffold_184	105444	105965	522	105734	36	3.89397	trChip_vs_input_peak_1540
scaffold_22	4928714	4929223	510	4928913	36	3.89397	trChip_vs_input_peak_1984
scaffold_29	573464	573774	311	573564	36	3.89397	trChip_vs_input_peak_2785
scaffold_4	6114381	6114759	379	6114615	36	3.89397	trChip_vs_input_peak_3889
scaffold_67	1058774	1059208	435	1059004	36	3.89397	trChip_vs_input_peak_5542
scaffold_809	266372	266681	310	266598	36	3.89397	trChip_vs_input_peak_6203
scaffold_832	226454	226736	283	226651	36	3.89397	trChip_vs_input_peak_6309
scaffold_12	1037743	1038195	453	1038015	29	3.89238	trChip_vs_input_peak_533
scaffold_13	2398168	2398412	245	2398280	29	3.89238	trChip_vs_input_peak_732
scaffold_213	719907	720157	251	720035	29	3.89238	trChip_vs_input_peak_1880
scaffold_418	251313	251595	283	251403	29	3.89238	trChip_vs_input_peak_4056
scaffold_55	648235	648578	344	648396	29	3.89238	trChip_vs_input_peak_4941
scaffold_155	961263	961771	509	961663	24	3.89228	trChip_vs_input_peak_1149
scaffold_22	2417611	2418150	540	2417807	24	3.89228	trChip_vs_input_peak_1963
scaffold_224	693037	693301	265	693234	24	3.89228	trChip_vs_input_peak_2027
scaffold_256	904263	904752	490	904654	24	3.89228	trChip_vs_input_peak_2372
scaffold_474	521710	521952	243	521783	24	3.89228	trChip_vs_input_peak_4464
scaffold_617	569593	570348	756	570120	24	3.89228	trChip_vs_input_peak_5292
scaffold_635	142071	142516	446	142220	24	3.89228	trChip_vs_input_peak_5359
scaffold_10	610051	610294	244	610167	19	3.89212	trChip_vs_input_peak_49
scaffold_338	1091092	1091422	331	1091219	19	3.89212	trChip_vs_input_peak_3287
scaffold_374	424259	424509	251	424342	19	3.89212	trChip_vs_input_peak_3638
scaffold_377	885668	886063	396	885883	19	3.89212	trChip_vs_input_peak_3677
scaffold_67	914390	914624	235	914504	19	3.89212	trChip_vs_input_peak_5541
scaffold_191	1679894	1680391	498	1680205	14	3.89186	trChip_vs_input_peak_1625
scaffold_2760	7277	7602	326	7436	14	3.89186	trChip_vs_input_peak_2593
scaffold_277	306018	306290	273	306138	14	3.89186	trChip_vs_input_peak_2595

scaffold_47	3104494	3104774	281	3104555	14	3.89186	trChip_vs_input_peak_4424
scaffold_686	90471	90751	281	90634	14	3.89186	trChip_vs_input_peak_5641
scaffold_700	162821	163055	235	162869	14	3.89186	trChip_vs_input_peak_5767
scaffold_54	1576176	1576426	251	1576386	12	3.8917	trChip_vs_input_peak_4881
scaffold_515	627826	628239	414	627936	9	3.89134	trChip_vs_input_peak_4763
scaffold_109	634525	634893	369	634645	43	3.88566	trChip_vs_input_peak_294
scaffold_301	1079815	1080215	401	1080027	43	3.88566	trChip_vs_input_peak_2960
scaffold_45	1413137	1413496	360	1413291	43	3.88566	trChip_vs_input_peak_4303
scaffold_98	2237256	2237761	506	2237545	43	3.88566	trChip_vs_input_peak_6717
scaffold_2442	7460	7726	267	7678	45	3.88318	trChip_vs_input_peak_2232
scaffold_177	1404019	1404253	235	1404069	18	3.88074	trChip_vs_input_peak_1459
scaffold_251	1584472	1584858	387	1584559	35	3.88049	trChip_vs_input_peak_2339
scaffold_12	5509502	5510023	522	5509806	30	3.8785	trChip_vs_input_peak_565
scaffold_222	62902	63487	586	63269	30	3.8785	trChip_vs_input_peak_2004
scaffold_7	642174	642415	242	642314	30	3.8785	trChip_vs_input_peak_5721
scaffold_137	2042660	2042981	322	2042865	13	3.87641	trChip_vs_input_peak_869
scaffold_1159	10017	10256	240	10075	17	3.87626	trChip_vs_input_peak_468
scaffold_1173	56635	56888	254	56795	17	3.87626	trChip_vs_input_peak_493
scaffold_125	1042519	1042755	237	1042594	17	3.87626	trChip_vs_input_peak_656
scaffold_133	1684642	1684955	314	1684715	17	3.87626	trChip_vs_input_peak_801
scaffold_171	1374994	1375235	242	1375129	17	3.87626	trChip_vs_input_peak_1371
scaffold_194	75451	75698	248	75629	17	3.87626	trChip_vs_input_peak_1636
scaffold_33	2959891	2960186	296	2960031	17	3.87626	trChip_vs_input_peak_3220
scaffold_376	663921	664183	263	664003	17	3.87626	trChip_vs_input_peak_3656
scaffold_415	319582	319816	235	319686	17	3.87626	trChip_vs_input_peak_4031
scaffold_55	2586690	2587081	392	2586767	17	3.87626	trChip_vs_input_peak_4947
scaffold_58	521241	521487	247	521307	17	3.87626	trChip_vs_input_peak_5086
scaffold_612	373557	373822	266	373624	17	3.87626	trChip_vs_input_peak_5273
scaffold_69	590922	591225	304	591018	17	3.87626	trChip_vs_input_peak_5661
scaffold_702	457110	457371	262	457243	17	3.87626	trChip_vs_input_peak_5771
scaffold_231	1088349	1088627	279	1088591	25	3.87574	trChip_vs_input_peak_2120
scaffold_37	1048435	1048752	318	1048555	25	3.87574	trChip_vs_input_peak_3574
scaffold_489	599150	599456	307	599304	25	3.87574	trChip_vs_input_peak_4564
scaffold_688	55908	56199	292	56086	25	3.87574	trChip_vs_input_peak_5650
scaffold_817	364599	364973	375	364770	25	3.87574	trChip_vs_input_peak_6233
scaffold_670	504307	504635	329	504467	10	3.87193	trChip_vs_input_peak_5569
scaffold_119	2171048	2171292	245	2171171	20	3.87168	trChip_vs_input_peak_526
scaffold_20	1258396	1258647	252	1258506	20	3.87168	trChip_vs_input_peak_1730
scaffold_314	648068	648395	328	648242	20	3.87168	trChip_vs_input_peak_3085
scaffold_63	3303065	3303534	470	3303319	20	3.87168	trChip_vs_input_peak_5349

scaffold_77	3113116	3113362	247	3113180	20	3.87168	trChip_vs_input_peak_6050
scaffold_933	99581	99819	239	99752	20	3.87168	trChip_vs_input_peak_6608
scaffold_480	75924	76158	235	75966	16	3.86672	trChip_vs_input_peak_4525
scaffold_109	311914	312436	523	312091	24	3.86669	trChip_vs_input_peak_291
scaffold_117	264343	264976	634	264567	24	3.86669	trChip_vs_input_peak_484
scaffold_1469	58080	58338	259	58135	24	3.86669	trChip_vs_input_peak_1010
scaffold_171	1524854	1525285	432	1525113	24	3.86669	trChip_vs_input_peak_1373
scaffold_188	1580457	1580814	358	1580630	24	3.86669	trChip_vs_input_peak_1574
scaffold_2	1388071	1388555	485	1388284	24	3.86669	trChip_vs_input_peak_1696
scaffold_209	183214	183522	309	183439	24	3.86669	trChip_vs_input_peak_1830
scaffold_222	688364	688722	359	688584	24	3.86669	trChip_vs_input_peak_2010
scaffold_238	1120671	1121308	638	1120926	24	3.86669	trChip_vs_input_peak_2167
scaffold_246	550351	550748	398	550531	24	3.86669	trChip_vs_input_peak_2250
scaffold_267	1533939	1534273	335	1534153	24	3.86669	trChip_vs_input_peak_2490
scaffold_281	1210025	1210333	309	1210134	24	3.86669	trChip_vs_input_peak_2696
scaffold_31	1096194	1096571	378	1096409	24	3.86669	trChip_vs_input_peak_3023
scaffold_34	401359	402029	671	401728	24	3.86669	trChip_vs_input_peak_3306
scaffold_346	199951	200294	344	200165	24	3.86669	trChip_vs_input_peak_3372
scaffold_360	994304	994588	285	994434	24	3.86669	trChip_vs_input_peak_3497
scaffold_38	2858648	2859139	492	2858842	24	3.86669	trChip_vs_input_peak_3714
scaffold_3863	2707	3050	344	2896	24	3.86669	trChip_vs_input_peak_3765
scaffold_394	908152	908475	324	908289	24	3.86669	trChip_vs_input_peak_3820
scaffold_48	1898164	1898507	344	1898396	24	3.86669	trChip_vs_input_peak_4517
scaffold_553	584978	585685	708	585248	24	3.86669	trChip_vs_input_peak_4961
scaffold_63	3216710	3216983	274	3216885	24	3.86669	trChip_vs_input_peak_5347
scaffold_67	2579600	2580440	841	2580302	24	3.86669	trChip_vs_input_peak_5555
scaffold_67	2706335	2706590	256	2706455	24	3.86669	trChip_vs_input_peak_5557
scaffold_694	133040	133277	238	133234	24	3.86669	trChip_vs_input_peak_5701
scaffold_760	453618	454156	539	453801	24	3.86669	trChip_vs_input_peak_6009
scaffold_785	127540	127775	236	127627	24	3.86669	trChip_vs_input_peak_6099
scaffold_786	270773	271192	420	270979	24	3.86669	trChip_vs_input_peak_6107
scaffold_82	1869821	1870283	463	1870073	24	3.86669	trChip_vs_input_peak_6240
scaffold_90	1495714	1496077	364	1495928	24	3.86669	trChip_vs_input_peak_6501
scaffold_91	199672	200074	403	199715	24	3.86669	trChip_vs_input_peak_6532
scaffold_954	71830	72071	242	71908	24	3.86669	trChip_vs_input_peak_6649
scaffold_110	212967	213376	410	213188	31	3.86557	trChip_vs_input_peak_352
scaffold_450	589159	589596	438	589314	31	3.86557	trChip_vs_input_peak_4318
scaffold_470	109488	109952	465	109708	31	3.86557	trChip_vs_input_peak_4425
scaffold_560	491795	493019	1225	492724	23	3.86541	trChip_vs_input_peak_5000
scaffold_8	2224859	2225529	671	2225393	23	3.86541	trChip_vs_input_peak_6157

scaffold_13	592739	592974	236	592857	15	3.86509	trChip_vs_input_peak_728
scaffold_24	2629371	2629702	332	2629512	15	3.86509	trChip_vs_input_peak_2181
scaffold_344	780461	780706	246	780583	15	3.86509	trChip_vs_input_peak_3363
scaffold_47	1193293	1193587	295	1193389	15	3.86509	trChip_vs_input_peak_4410
scaffold_49	61129	61416	288	61289	15	3.86509	trChip_vs_input_peak_4566
scaffold_146	509035	509294	260	509160	20	3.86152	trChip_vs_input_peak_998
scaffold_10	3983554	3983892	339	3983697	31	3.86132	trChip_vs_input_peak_62
scaffold_12	2650162	2650410	249	2650318	31	3.86132	trChip_vs_input_peak_545
scaffold_124	1870260	1870618	359	1870420	31	3.86132	trChip_vs_input_peak_641
scaffold_142	2124041	2124404	364	2124122	31	3.86132	trChip_vs_input_peak_946
scaffold_207	611029	611477	449	611258	31	3.86132	trChip_vs_input_peak_1815
scaffold_213	1643372	1643853	482	1643560	31	3.86132	trChip_vs_input_peak_1884
scaffold_268	1296707	1297162	456	1297046	31	3.86132	trChip_vs_input_peak_2498
scaffold_293	822922	823929	1008	823123	31	3.86132	trChip_vs_input_peak_2815
scaffold_295	1131746	1132302	557	1132149	31	3.86132	trChip_vs_input_peak_2836
scaffold_341	1187285	1187667	383	1187510	31	3.86132	trChip_vs_input_peak_3350
scaffold_355	268740	269121	382	268954	31	3.86132	trChip_vs_input_peak_3448
scaffold_44	3234461	3235344	884	3235136	31	3.86132	trChip_vs_input_peak_4239
scaffold_452	513105	513546	442	513324	31	3.86132	trChip_vs_input_peak_4325
scaffold_541	648590	649230	641	649038	31	3.86132	trChip_vs_input_peak_4902
scaffold_715	302652	303165	514	302855	31	3.86132	trChip_vs_input_peak_5809
scaffold_914	214334	215452	1119	215153	31	3.86132	trChip_vs_input_peak_6557
scaffold_94	1124904	1125237	334	1125055	31	3.86132	trChip_vs_input_peak_6620
scaffold_2	3054323	3054809	487	3054549	26	3.86055	trChip_vs_input_peak_1700
scaffold_224	935779	936139	361	935979	26	3.86055	trChip_vs_input_peak_2029
scaffold_23	3815282	3815554	273	3815346	26	3.86055	trChip_vs_input_peak_2101
scaffold_340	925335	926142	808	925976	26	3.86055	trChip_vs_input_peak_3341
scaffold_42	2379156	2379529	374	2379318	26	3.86055	trChip_vs_input_peak_4085
scaffold_427	11603	12415	813	11881	26	3.86055	trChip_vs_input_peak_4125
scaffold_72	1197613	1197970	358	1197746	26	3.86055	trChip_vs_input_peak_5833
scaffold_1	6866623	6866883	261	6866800	38	3.8579	trChip_vs_input_peak_40
scaffold_130	2139095	2139736	642	2139318	38	3.8579	trChip_vs_input_peak_763
scaffold_26	1215785	1216404	620	1215946	38	3.8579	trChip_vs_input_peak_2401
scaffold_289	743888	744430	543	744166	38	3.8579	trChip_vs_input_peak_2774
scaffold_35	2138354	2139129	776	2138931	38	3.8579	trChip_vs_input_peak_3410
scaffold_398	858240	858731	492	858450	38	3.8579	trChip_vs_input_peak_3847
scaffold_427	387158	387422	265	387275	38	3.8579	trChip_vs_input_peak_4138
scaffold_515	300993	301395	403	301181	38	3.8579	trChip_vs_input_peak_4751
scaffold_531	684135	684597	463	684369	38	3.8579	trChip_vs_input_peak_4848
scaffold_615	403484	404062	579	403841	38	3.8579	trChip_vs_input_peak_5283

scaffold_656	325229	325965	737	325626	38	3.8579	trChip_vs_input_peak_5482
scaffold_130	2074421	2075052	632	2074615	32	3.85351	trChip_vs_input_peak_759
scaffold_158	1343199	1343508	310	1343397	32	3.85351	trChip_vs_input_peak_1192
scaffold_108	2682844	2683102	259	2682974	21	3.85328	trChip_vs_input_peak_265
scaffold_198	390032	390286	255	390135	21	3.85328	trChip_vs_input_peak_1664
scaffold_248	1376563	1376851	289	1376668	21	3.85328	trChip_vs_input_peak_2280
scaffold_325	869031	869633	603	869547	21	3.85328	trChip_vs_input_peak_3169
scaffold_377	547659	548199	541	547763	21	3.85328	trChip_vs_input_peak_3675
scaffold_582	417601	417956	356	417787	21	3.85328	trChip_vs_input_peak_5120
scaffold_61	85697	85970	274	85890	21	3.85328	trChip_vs_input_peak_5260
scaffold_103	2349262	2349552	291	2349397	15	3.85181	trChip_vs_input_peak_145
scaffold_43	1728764	1729119	356	1728886	14	3.8491	trChip_vs_input_peak_4163
scaffold_958	122831	123104	274	122949	14	3.8491	trChip_vs_input_peak_6659
scaffold_114	133288	133603	316	133428	27	3.84656	trChip_vs_input_peak_441
scaffold_179	211138	211615	478	211276	27	3.84656	trChip_vs_input_peak_1481
scaffold_182	989400	989637	238	989510	27	3.84656	trChip_vs_input_peak_1533
scaffold_337	562297	562539	243	562428	27	3.84656	trChip_vs_input_peak_3280
scaffold_6	3857350	3857816	467	3857583	27	3.84656	trChip_vs_input_peak_5204
scaffold_271	1129203	1129503	301	1129367	33	3.84222	trChip_vs_input_peak_2557
scaffold_134	369742	370063	322	369876	16	3.84178	trChip_vs_input_peak_807
scaffold_145	469273	469522	250	469463	16	3.84178	trChip_vs_input_peak_981
scaffold_277	394993	395233	241	395029	16	3.84178	trChip_vs_input_peak_2599
scaffold_3	4905454	4905994	541	4905523	16	3.84178	trChip_vs_input_peak_2897
scaffold_332	555963	556224	262	556080	16	3.84178	trChip_vs_input_peak_3236
scaffold_11	3982998	3983238	241	3983164	22	3.83663	trChip_vs_input_peak_335
scaffold_1179	13964	14294	331	14093	22	3.83663	trChip_vs_input_peak_497
scaffold_12	5529555	5529843	289	5529644	22	3.83663	trChip_vs_input_peak_566
scaffold_15	2923599	2924007	409	2923813	22	3.83663	trChip_vs_input_peak_1061
scaffold_309	1260365	1261109	745	1260590	22	3.83663	trChip_vs_input_peak_3017
scaffold_33	762294	762555	262	762378	22	3.83663	trChip_vs_input_peak_3214
scaffold_341	773277	773646	370	773434	22	3.83663	trChip_vs_input_peak_3347
scaffold_41	2115359	2115648	290	2115505	22	3.83663	trChip_vs_input_peak_3981
scaffold_469	784493	784740	248	784655	22	3.83663	trChip_vs_input_peak_4401
scaffold_508	780731	780989	259	780804	22	3.83663	trChip_vs_input_peak_4720
scaffold_702	499368	499694	327	499533	22	3.83663	trChip_vs_input_peak_5772
scaffold_71	811364	811636	273	811549	22	3.83663	trChip_vs_input_peak_5800
scaffold_91	237814	238087	274	237994	22	3.83663	trChip_vs_input_peak_6533
scaffold_154	1044267	1044748	482	1044415	28	3.83362	trChip_vs_input_peak_1126
scaffold_289	438076	438508	433	438390	28	3.83362	trChip_vs_input_peak_2768
scaffold_312	180762	181328	567	180859	28	3.83362	trChip_vs_input_peak_3075

scaffold_329	795976	796605	630	796434	28	3.83362	trChip_vs_input_peak_3209
scaffold_36	480752	481120	369	480905	34	3.83164	trChip_vs_input_peak_3485
scaffold_85	303459	303959	501	303685	47	3.82829	trChip_vs_input_peak_6346
scaffold_101	2426636	2427525	890	2427302	40	3.82591	trChip_vs_input_peak_99
scaffold_360	886702	887137	436	887018	40	3.82591	trChip_vs_input_peak_3496
scaffold_517	566401	566943	543	566825	40	3.82591	trChip_vs_input_peak_4776
scaffold_679	104489	105035	547	104653	40	3.82591	trChip_vs_input_peak_5605
scaffold_9746	10699	11189	491	10897	40	3.82591	trChip_vs_input_peak_6709
scaffold_105	2680786	2681021	236	2680927	33	3.82255	trChip_vs_input_peak_187
scaffold_135	1797969	1798243	275	1798064	33	3.82255	trChip_vs_input_peak_842
scaffold_147	150079	150748	670	150532	33	3.82255	trChip_vs_input_peak_1011
scaffold_148	252048	252646	599	252530	33	3.82255	trChip_vs_input_peak_1027
scaffold_241	1397687	1398333	647	1397915	33	3.82255	trChip_vs_input_peak_2200
scaffold_335	13500	13848	349	13593	33	3.82255	trChip_vs_input_peak_3260
scaffold_4	923030	923303	274	923152	33	3.82255	trChip_vs_input_peak_3870
scaffold_427	325414	325976	563	325905	33	3.82255	trChip_vs_input_peak_4136
scaffold_427	420437	420748	312	420598	33	3.82255	trChip_vs_input_peak_4139
scaffold_49	267046	267627	582	267245	33	3.82255	trChip_vs_input_peak_4568
scaffold_529	807613	807955	343	807788	33	3.82255	trChip_vs_input_peak_4824
scaffold_544	526317	526630	314	526419	33	3.82255	trChip_vs_input_peak_4915
scaffold_69	1004271	1004886	616	1004619	33	3.82255	trChip_vs_input_peak_5667
scaffold_728	140535	140895	361	140650	33	3.82255	trChip_vs_input_peak_5864
scaffold_77	2702404	2702932	529	2702704	33	3.82255	trChip_vs_input_peak_6035
scaffold_8	3334049	3334567	519	3334125	33	3.82255	trChip_vs_input_peak_6159
scaffold_850	35660	35989	330	35778	33	3.82255	trChip_vs_input_peak_6363
scaffold_874	165665	165990	326	165804	33	3.82255	trChip_vs_input_peak_6431
scaffold_925	177643	178086	444	177862	33	3.82255	trChip_vs_input_peak_6589
scaffold_417	542235	542529	295	542381	35	3.8217	trChip_vs_input_peak_4051
scaffold_308	745662	746029	368	745845	29	3.82162	trChip_vs_input_peak_3002
scaffold_402	458179	458773	595	458542	29	3.82162	trChip_vs_input_peak_3929
scaffold_863	210348	210828	481	210619	29	3.82162	trChip_vs_input_peak_6401
scaffold_105	2284153	2284594	442	2284381	23	3.8215	trChip_vs_input_peak_182
scaffold_180	2048820	2049151	332	2048999	23	3.8215	trChip_vs_input_peak_1523
scaffold_27	1747349	1747697	349	1747543	23	3.8215	trChip_vs_input_peak_2524
scaffold_314	1270464	1270762	299	1270555	23	3.8215	trChip_vs_input_peak_3089
scaffold_325	934039	934443	405	934108	23	3.8215	trChip_vs_input_peak_3173
scaffold_543	617108	617502	395	617316	23	3.8215	trChip_vs_input_peak_4907
scaffold_786	106034	106312	279	106262	23	3.8215	trChip_vs_input_peak_6104
scaffold_10	2539363	2539654	292	2539520	17	3.82129	trChip_vs_input_peak_53
scaffold_112	2228163	2228453	291	2228369	17	3.82129	trChip_vs_input_peak_404

scaffold_230	931808	932075	268	931894	17	3.82129	trChip_vs_input_peak_2110
scaffold_280	174404	175036	633	174812	17	3.82129	trChip_vs_input_peak_2668
scaffold_29	4227603	4228061	459	4227813	17	3.82129	trChip_vs_input_peak_2800
scaffold_399	649186	649420	235	649228	17	3.82129	trChip_vs_input_peak_3862
scaffold_456	651055	651346	292	651243	17	3.82129	trChip_vs_input_peak_4337
scaffold_682	466589	466833	245	466705	17	3.82129	trChip_vs_input_peak_5635
scaffold_122	910980	911271	292	911141	26	3.81746	trChip_vs_input_peak_599
scaffold_19	1873146	1873963	818	1873439	26	3.81746	trChip_vs_input_peak_1602
scaffold_198	929840	930159	320	930006	26	3.81746	trChip_vs_input_peak_1669
scaffold_279	1154831	1155336	506	1155198	26	3.81746	trChip_vs_input_peak_2629
scaffold_29	4359737	4360270	534	4360066	26	3.81746	trChip_vs_input_peak_2802
scaffold_309	938124	938725	602	938622	26	3.81746	trChip_vs_input_peak_3014
scaffold_322	520047	520320	274	520233	26	3.81746	trChip_vs_input_peak_3154
scaffold_33	3819547	3820032	486	3819837	26	3.81746	trChip_vs_input_peak_3228
scaffold_345	485516	485799	284	485632	26	3.81746	trChip_vs_input_peak_3366
scaffold_374	983661	983996	336	983862	26	3.81746	trChip_vs_input_peak_3644
scaffold_38	3003393	3003632	240	3003496	26	3.81746	trChip_vs_input_peak_3717
scaffold_380	906572	906833	262	906716	26	3.81746	trChip_vs_input_peak_3734
scaffold_431	267796	268221	426	268003	26	3.81746	trChip_vs_input_peak_4178
scaffold_5	867650	868225	576	868029	26	3.81746	trChip_vs_input_peak_4642
scaffold_540	301086	301395	310	301272	26	3.81746	trChip_vs_input_peak_4891
scaffold_69	126400	126662	263	126490	26	3.81746	trChip_vs_input_peak_5655
scaffold_721	179850	180097	248	179952	26	3.81746	trChip_vs_input_peak_5843
scaffold_91	2532844	2533105	262	2533014	26	3.81746	trChip_vs_input_peak_6547
scaffold_987	218133	218386	254	218312	26	3.81746	trChip_vs_input_peak_6724
scaffold_166	1263333	1263567	235	1263543	13	3.81609	trChip_vs_input_peak_1299
scaffold_95	1481639	1481993	355	1481827	36	3.81235	trChip_vs_input_peak_6635
scaffold_132	1110585	1110947	363	1110790	30	3.81046	trChip_vs_input_peak_788
scaffold_186	1300128	1300477	350	1300279	30	3.81046	trChip_vs_input_peak_1561
scaffold_268	648843	649188	346	649082	30	3.81046	trChip_vs_input_peak_2494
scaffold_587	672805	673250	446	672961	30	3.81046	trChip_vs_input_peak_5142
scaffold_1019	188740	189294	555	189268	19	3.80885	trChip_vs_input_peak_112
scaffold_1111	97790	98045	256	97996	19	3.80885	trChip_vs_input_peak_385
scaffold_119	1632250	1632527	278	1632309	19	3.80885	trChip_vs_input_peak_521
scaffold_124	894492	894879	388	894689	19	3.80885	trChip_vs_input_peak_640
scaffold_15745	836	1101	266	984	19	3.80885	trChip_vs_input_peak_1181
scaffold_18	3329683	3329948	266	3329776	19	3.80885	trChip_vs_input_peak_1507
scaffold_180	1109878	1110112	235	1109904	19	3.80885	trChip_vs_input_peak_1519
scaffold_232	1263079	1263326	248	1263197	19	3.80885	trChip_vs_input_peak_2130
scaffold_281	94072	94374	303	94187	19	3.80885	trChip_vs_input_peak_2677

scaffold_289	1230018	1230584	567	1230370	19	3.80885	trChip_vs_input_peak_2779
scaffold_351	1099066	1099321	256	1099249	19	3.80885	trChip_vs_input_peak_3422
scaffold_37	3487560	3487846	287	3487712	19	3.80885	trChip_vs_input_peak_3607
scaffold_38	737671	737980	310	737831	19	3.80885	trChip_vs_input_peak_3692
scaffold_397	912778	913115	338	912923	19	3.80885	trChip_vs_input_peak_3842
scaffold_426	345929	346434	506	346120	19	3.80885	trChip_vs_input_peak_4115
scaffold_47	1489631	1489998	368	1489778	19	3.80885	trChip_vs_input_peak_4412
scaffold_497	737972	738380	409	738275	19	3.80885	trChip_vs_input_peak_4629
scaffold_774	32146	32384	239	32296	19	3.80885	trChip_vs_input_peak_6058
scaffold_794	401677	401920	244	401769	19	3.80885	trChip_vs_input_peak_6142
scaffold_857	200500	200782	283	200665	19	3.80885	trChip_vs_input_peak_6381
scaffold_17	1477551	1478356	806	1477914	24	3.80768	trChip_vs_input_peak_1343
scaffold_300	1350984	1351480	497	1351179	24	3.80768	trChip_vs_input_peak_2956
scaffold_334	926478	926848	371	926659	24	3.80768	trChip_vs_input_peak_3257
scaffold_782	45866	46131	266	46004	24	3.80768	trChip_vs_input_peak_6087
scaffold_84	113981	114216	236	114101	24	3.80768	trChip_vs_input_peak_6323
scaffold_872	234741	235152	412	235102	24	3.80768	trChip_vs_input_peak_6428
scaffold_178	1436592	1436963	372	1436766	16	3.80496	trChip_vs_input_peak_1473
scaffold_65	660948	661273	326	661133	16	3.80496	trChip_vs_input_peak_5450
scaffold_1392	1	622	622	218	49	3.80358	trChip_vs_input_peak_898
scaffold_105	1730890	1731297	408	1731118	18	3.80314	trChip_vs_input_peak_174
scaffold_194	26390	26662	273	26544	18	3.80314	trChip_vs_input_peak_1635
scaffold_502	529401	529651	251	529598	18	3.80314	trChip_vs_input_peak_4683
scaffold_673	73770	74032	263	73882	18	3.80314	trChip_vs_input_peak_5586
scaffold_726	95178	95640	463	95606	18	3.80314	trChip_vs_input_peak_5860
scaffold_264	1352065	1352813	749	1352387	22	3.80044	trChip_vs_input_peak_2457
scaffold_14	5449604	5450053	450	5449747	31	3.80006	trChip_vs_input_peak_921
scaffold_16	4433131	4433474	344	4433339	31	3.80006	trChip_vs_input_peak_1233
scaffold_401	782650	783389	740	782904	42	3.79735	trChip_vs_input_peak_3926
scaffold_757	69312	69728	417	69521	42	3.79735	trChip_vs_input_peak_5957
scaffold_147	151060	151570	511	151380	25	3.79501	trChip_vs_input_peak_1012
scaffold_173	1635352	1636094	743	1635909	25	3.79501	trChip_vs_input_peak_1390
scaffold_31	2802349	2802742	394	2802418	25	3.79501	trChip_vs_input_peak_3032
scaffold_333	825751	826049	299	825897	25	3.79501	trChip_vs_input_peak_3243
scaffold_38	645352	645872	521	645580	25	3.79501	trChip_vs_input_peak_3691
scaffold_87	2597069	2597414	346	2597220	25	3.79501	trChip_vs_input_peak_6421
scaffold_102	2091375	2091703	329	2091602	12	3.79108	trChip_vs_input_peak_125
scaffold_156	1068749	1068983	235	1068836	12	3.79108	trChip_vs_input_peak_1170
scaffold_1568	23819	24134	316	23942	12	3.79108	trChip_vs_input_peak_1175
scaffold_160	1195977	1196211	235	1196030	12	3.79108	trChip_vs_input_peak_1240

scaffold_279	1303672	1303963	292	1303807	12	3.79108	trChip_vs_input_peak_2631
scaffold_494	289993	290227	235	290070	12	3.79108	trChip_vs_input_peak_4611
scaffold_708	35577	35882	306	35704	12	3.79108	trChip_vs_input_peak_5784
scaffold_447	773415	773707	293	773604	32	3.79034	trChip_vs_input_peak_4274
scaffold_15	1504594	1504977	384	1504878	35	3.78873	trChip_vs_input_peak_1054
scaffold_1655	13998	14486	489	14175	35	3.78873	trChip_vs_input_peak_1294
scaffold_23	1162708	1163147	440	1162928	35	3.78873	trChip_vs_input_peak_2090
scaffold_281	1177883	1178321	439	1178068	35	3.78873	trChip_vs_input_peak_2694
scaffold_356	99163	99471	309	99323	35	3.78873	trChip_vs_input_peak_3460
scaffold_435	448755	449132	378	448974	35	3.78873	trChip_vs_input_peak_4189
scaffold_475	505858	508474	2617	507942	35	3.78873	trChip_vs_input_peak_4472
scaffold_659	162661	163321	661	163047	35	3.78873	trChip_vs_input_peak_5488
scaffold_709	232870	233655	786	233184	35	3.78873	trChip_vs_input_peak_5790
scaffold_80	2052000	2052537	538	2052206	35	3.78873	trChip_vs_input_peak_6181
scaffold_113	1596493	1596752	260	1596575	19	3.78695	trChip_vs_input_peak_428
scaffold_427	7209	7468	260	7367	19	3.78695	trChip_vs_input_peak_4124
scaffold_568	412630	413014	385	412835	19	3.78695	trChip_vs_input_peak_5043
scaffold_67	3325297	3325608	312	3325481	19	3.78695	trChip_vs_input_peak_5560
scaffold_88	400426	400751	326	400544	19	3.78695	trChip_vs_input_peak_6441
scaffold_498	19424	19658	235	19442	15	3.78676	trChip_vs_input_peak_4630
scaffold_516	541969	542756	788	542156	15	3.78676	trChip_vs_input_peak_4771
scaffold_10	3574384	3574756	373	3574578	26	3.78335	trChip_vs_input_peak_58
scaffold_262	868531	869113	583	868748	26	3.78335	trChip_vs_input_peak_2439
scaffold_28	2872476	2872882	407	2872671	26	3.78335	trChip_vs_input_peak_2657
scaffold_91	2352707	2353158	452	2352991	26	3.78335	trChip_vs_input_peak_6545
scaffold_2	5881129	5881435	307	5881243	33	3.78124	trChip_vs_input_peak_1716
scaffold_109	764235	764879	645	764707	28	3.77602	trChip_vs_input_peak_298
scaffold_109	1245297	1245826	530	1245597	28	3.77602	trChip_vs_input_peak_301
scaffold_1226	61334	61703	370	61548	28	3.77602	trChip_vs_input_peak_616
scaffold_14	3142099	3142415	317	3142252	28	3.77602	trChip_vs_input_peak_911
scaffold_167	1655078	1655391	314	1655254	28	3.77602	trChip_vs_input_peak_1318
scaffold_202	417802	418220	419	418090	28	3.77602	trChip_vs_input_peak_1756
scaffold_206	164447	165256	810	164689	28	3.77602	trChip_vs_input_peak_1797
scaffold_229	695127	695460	334	695240	28	3.77602	trChip_vs_input_peak_2079
scaffold_231	430560	430794	235	430632	28	3.77602	trChip_vs_input_peak_2116
scaffold_245	515381	515696	316	515469	28	3.77602	trChip_vs_input_peak_2235
scaffold_287	633822	634084	263	633940	28	3.77602	trChip_vs_input_peak_2753
scaffold_289	458882	459328	447	459095	28	3.77602	trChip_vs_input_peak_2769
scaffold_311	999906	1000245	340	1000071	28	3.77602	trChip_vs_input_peak_3070
scaffold_34	3437523	3437786	264	3437708	28	3.77602	trChip_vs_input_peak_3329

scaffold_376	563895	564365	471	564101	28	3.77602	trChip_vs_input_peak_3653
scaffold_423	830399	830951	553	830564	28	3.77602	trChip_vs_input_peak_4107
scaffold_427	3501	4287	787	3730	28	3.77602	trChip_vs_input_peak_4122
scaffold_44	1207566	1207941	376	1207832	28	3.77602	trChip_vs_input_peak_4218
scaffold_571	245310	245603	294	245530	28	3.77602	trChip_vs_input_peak_5057
scaffold_74	1813324	1813607	284	1813496	28	3.77602	trChip_vs_input_peak_5911
scaffold_75	301829	302262	434	302030	28	3.77602	trChip_vs_input_peak_5939
scaffold_76	2423318	2423634	317	2423437	28	3.77602	trChip_vs_input_peak_5974
scaffold_760	210170	210560	391	210340	28	3.77602	trChip_vs_input_peak_6001
scaffold_97	1419794	1420168	375	1419952	28	3.77602	trChip_vs_input_peak_6698
scaffold_102	2461713	2462103	391	2461938	27	3.7726	trChip_vs_input_peak_127
scaffold_207	430500	430870	371	430690	27	3.7726	trChip_vs_input_peak_1811
scaffold_251	682473	683128	656	682635	27	3.7726	trChip_vs_input_peak_2329
scaffold_37	1990798	1991521	724	1991100	27	3.7726	trChip_vs_input_peak_3591
scaffold_85	1934739	1935000	262	1934839	27	3.7726	trChip_vs_input_peak_6355
scaffold_262	1510738	1511013	276	1510922	20	3.77242	trChip_vs_input_peak_2442
scaffold_3	4687618	4688166	549	4688033	20	3.77242	trChip_vs_input_peak_2895
scaffold_326	212833	213080	248	212968	20	3.77242	trChip_vs_input_peak_3183
scaffold_381	467434	467741	308	467562	20	3.77242	trChip_vs_input_peak_3736
scaffold_40	2966133	2966367	235	2966309	20	3.77242	trChip_vs_input_peak_3905
scaffold_405	725596	726285	690	726227	20	3.77242	trChip_vs_input_peak_3948
scaffold_48	583359	583830	472	583749	20	3.77242	trChip_vs_input_peak_4508
scaffold_507	474288	474589	302	474457	20	3.77242	trChip_vs_input_peak_4716
scaffold_182	608784	609109	326	608896	44	3.7717	trChip_vs_input_peak_1532
scaffold_792	200882	201316	435	201119	44	3.7717	trChip_vs_input_peak_6131
scaffold_73	1412248	1412486	239	1412406	16	3.76885	trChip_vs_input_peak_5881
scaffold_586	341184	341418	235	341267	9	3.76586	trChip_vs_input_peak_5127
scaffold_662	68995	69345	351	69135	35	3.76467	trChip_vs_input_peak_5514
scaffold_299	553812	554421	610	553978	28	3.76264	trChip_vs_input_peak_2862
scaffold_81	1688893	1689326	434	1689115	28	3.76264	trChip_vs_input_peak_6205
scaffold_16	1307121	1307363	243	1307153	21	3.75931	trChip_vs_input_peak_1219
scaffold_22	2746049	2746438	390	2746255	21	3.75931	trChip_vs_input_peak_1965
scaffold_287	624214	624472	259	624351	21	3.75931	trChip_vs_input_peak_2752
scaffold_327	1283565	1283820	256	1283712	21	3.75931	trChip_vs_input_peak_3199
scaffold_640	276383	276637	255	276519	21	3.75931	trChip_vs_input_peak_5398
scaffold_68	2692692	2693022	331	2692802	21	3.75931	trChip_vs_input_peak_5628
scaffold_776	88177	88711	535	88489	21	3.75931	trChip_vs_input_peak_6065
scaffold_97	2355443	2355857	415	2355647	21	3.75931	trChip_vs_input_peak_6701
scaffold_191	48237	48610	374	48466	37	3.75897	trChip_vs_input_peak_1612
scaffold_209	1471552	1472219	668	1471700	37	3.75897	trChip_vs_input_peak_1834

scaffold_266	365764	366188	425	365872	37	3.75897	trChip_vs_input_peak_2470
scaffold_27	2122870	2123197	328	2123015	37	3.75897	trChip_vs_input_peak_2529
scaffold_8	5549768	5550084	317	5549856	37	3.75897	trChip_vs_input_peak_6169
scaffold_105	2561565	2561803	239	2561643	21	3.75541	trChip_vs_input_peak_183
scaffold_115	15868	16136	269	15908	21	3.75541	trChip_vs_input_peak_461
scaffold_125	417618	418093	476	418016	21	3.75541	trChip_vs_input_peak_651
scaffold_1326	39349	39628	280	39408	21	3.75541	trChip_vs_input_peak_790
scaffold_178	1008527	1008810	284	1008701	21	3.75541	trChip_vs_input_peak_1469
scaffold_205	1677160	1677416	257	1677266	21	3.75541	trChip_vs_input_peak_1793
scaffold_207	1042841	1043083	243	1042888	21	3.75541	trChip_vs_input_peak_1817
scaffold_276	1033496	1033730	235	1033645	21	3.75541	trChip_vs_input_peak_2591
scaffold_279	287846	288177	332	287966	21	3.75541	trChip_vs_input_peak_2618
scaffold_281	1076973	1077299	327	1077101	21	3.75541	trChip_vs_input_peak_2690
scaffold_372	688695	689041	347	688896	21	3.75541	trChip_vs_input_peak_3621
scaffold_436	127872	128106	235	128003	21	3.75541	trChip_vs_input_peak_4194
scaffold_440	85662	85902	241	85854	21	3.75541	trChip_vs_input_peak_4241
scaffold_49	1657203	1657536	334	1657350	21	3.75541	trChip_vs_input_peak_4573
scaffold_49	3281387	3281660	274	3281451	21	3.75541	trChip_vs_input_peak_4590
scaffold_587	462104	462345	242	462141	21	3.75541	trChip_vs_input_peak_5140
scaffold_59	3156132	3156376	245	3156324	21	3.75541	trChip_vs_input_peak_5158
scaffold_61	85386	85629	244	85604	21	3.75541	trChip_vs_input_peak_5259
scaffold_66	2527391	2527709	319	2527418	21	3.75541	trChip_vs_input_peak_5499
scaffold_6723	1313	1725	413	1582	21	3.75541	trChip_vs_input_peak_5583
scaffold_734	212870	213127	258	213055	21	3.75541	trChip_vs_input_peak_5885
scaffold_766	313547	313813	267	313682	21	3.75541	trChip_vs_input_peak_6016
scaffold_82	2480370	2480707	338	2480475	21	3.75541	trChip_vs_input_peak_6245
scaffold_848	209421	209725	305	209570	21	3.75541	trChip_vs_input_peak_6342
scaffold_897	38556	38822	267	38756	21	3.75541	trChip_vs_input_peak_6491
scaffold_99	442795	443293	499	442850	21	3.75541	trChip_vs_input_peak_6728
scaffold_12	1106335	1106573	239	1106406	29	3.75339	trChip_vs_input_peak_534
scaffold_243	1432997	1433231	235	1433087	29	3.75339	trChip_vs_input_peak_2220
scaffold_3	3319509	3319974	466	3319750	29	3.75339	trChip_vs_input_peak_2883
scaffold_3	4688634	4688877	244	4688725	29	3.75339	trChip_vs_input_peak_2896
scaffold_307	704015	704354	340	704181	29	3.75339	trChip_vs_input_peak_2997
scaffold_59	2904121	2904529	409	2904273	29	3.75339	trChip_vs_input_peak_5156
scaffold_232	1263586	1263881	296	1263699	14	3.7529	trChip_vs_input_peak_2131
scaffold_134	1961542	1961928	387	1961716	15	3.74878	trChip_vs_input_peak_821
scaffold_26	2210409	2210766	358	2210555	15	3.74878	trChip_vs_input_peak_2405
scaffold_19	4157573	4157968	396	4157747	46	3.74853	trChip_vs_input_peak_1607
scaffold_129	2431273	2431986	714	2431781	22	3.74742	trChip_vs_input_peak_721

scaffold_137	2376062	2376464	403	2376248	22	3.74742	trChip_vs_input_peak_874
scaffold_142	1346431	1346665	235	1346559	22	3.74742	trChip_vs_input_peak_941
scaffold_165	1739979	1740455	477	1740254	22	3.74742	trChip_vs_input_peak_1286
scaffold_2	5049111	5050123	1013	5049947	22	3.74742	trChip_vs_input_peak_1711
scaffold_2069	12949	13281	333	13149	22	3.74742	trChip_vs_input_peak_1805
scaffold_22	4024985	4025452	468	4025132	22	3.74742	trChip_vs_input_peak_1975
scaffold_237	364215	364517	303	364404	22	3.74742	trChip_vs_input_peak_2157
scaffold_629	617732	618010	279	617878	22	3.74742	trChip_vs_input_peak_5337
scaffold_32	1314558	1314792	235	1314734	13	3.74329	trChip_vs_input_peak_3127
scaffold_289	467426	468502	1077	468135	55	3.74148	trChip_vs_input_peak_2771
scaffold_135	1078462	1078767	306	1078634	30	3.74066	trChip_vs_input_peak_838
scaffold_15	2815843	2816082	240	2815990	30	3.74066	trChip_vs_input_peak_1059
scaffold_173	1907427	1907926	500	1907653	30	3.74066	trChip_vs_input_peak_1394
scaffold_177	1167070	1167320	251	1167221	30	3.74066	trChip_vs_input_peak_1457
scaffold_20	1926800	1927345	546	1927114	30	3.74066	trChip_vs_input_peak_1736
scaffold_212	827015	827284	270	827108	30	3.74066	trChip_vs_input_peak_1876
scaffold_246	33046	33328	283	33174	30	3.74066	trChip_vs_input_peak_2244
scaffold_265	1327308	1327625	318	1327520	30	3.74066	trChip_vs_input_peak_2465
scaffold_269	987484	987988	505	987800	30	3.74066	trChip_vs_input_peak_2501
scaffold_291	967055	967324	270	967155	30	3.74066	trChip_vs_input_peak_2808
scaffold_304	1323827	1324178	352	1323995	30	3.74066	trChip_vs_input_peak_2981
scaffold_323	1239006	1239359	354	1239184	30	3.74066	trChip_vs_input_peak_3162
scaffold_366	494808	495142	335	494984	30	3.74066	trChip_vs_input_peak_3531
scaffold_43	723222	723456	235	723344	30	3.74066	trChip_vs_input_peak_4159
scaffold_49	2436130	2436384	255	2436277	30	3.74066	trChip_vs_input_peak_4584
scaffold_5	890649	891146	498	891042	30	3.74066	trChip_vs_input_peak_4643
scaffold_58	3012415	3012786	372	3012570	30	3.74066	trChip_vs_input_peak_5102
scaffold_593	107095	107591	497	107315	30	3.74066	trChip_vs_input_peak_5168
scaffold_68	2286415	2286929	515	2286617	30	3.74066	trChip_vs_input_peak_5622
scaffold_686	278514	279149	636	278696	30	3.74066	trChip_vs_input_peak_5644
scaffold_791	289349	289748	400	289481	30	3.74066	trChip_vs_input_peak_6124
scaffold_792	59119	59724	606	59593	30	3.74066	trChip_vs_input_peak_6127
scaffold_249	432350	433121	772	432528	31	3.73674	trChip_vs_input_peak_2285
scaffold_142	1596655	1596939	285	1596733	23	3.73659	trChip_vs_input_peak_945
scaffold_18	485157	485507	351	485332	23	3.73659	trChip_vs_input_peak_1498
scaffold_201	911756	912099	344	911955	23	3.73659	trChip_vs_input_peak_1750
scaffold_322	1155208	1155485	278	1155305	23	3.73659	trChip_vs_input_peak_3157
scaffold_108	2269614	2269848	235	2269729	15	3.73629	trChip_vs_input_peak_264
scaffold_530	620522	620771	250	620566	15	3.73629	trChip_vs_input_peak_4843
scaffold_31	2931544	2931821	278	2931708	39	3.73259	trChip_vs_input_peak_3036

scaffold_424	733025	733592	568	733259	39	3.73259	trChip_vs_input_peak_4110
scaffold_45	1944244	1944651	408	1944381	39	3.73259	trChip_vs_input_peak_4307
scaffold_196	584079	584313	235	584253	12	3.73225	trChip_vs_input_peak_1649
scaffold_2	922643	923153	511	922789	32	3.72922	trChip_vs_input_peak_1690
scaffold_214	1377290	1377784	495	1377603	32	3.72922	trChip_vs_input_peak_1888
scaffold_646	53883	54411	529	54179	48	3.72751	trChip_vs_input_peak_5417
scaffold_26	3662131	3662444	314	3662336	24	3.72667	trChip_vs_input_peak_2409
scaffold_35	1549973	1550318	346	1550168	24	3.72667	trChip_vs_input_peak_3397
scaffold_47	998167	998534	368	998376	24	3.72667	trChip_vs_input_peak_4407
scaffold_55	735870	736175	306	736000	24	3.72667	trChip_vs_input_peak_4942
scaffold_686	280232	280488	257	280313	24	3.72667	trChip_vs_input_peak_5645
scaffold_2	1231314	1231754	441	1231540	15	3.72388	trChip_vs_input_peak_1695
scaffold_10	2541018	2541529	512	2541196	16	3.72175	trChip_vs_input_peak_54
scaffold_220	213533	213776	244	213574	16	3.72175	trChip_vs_input_peak_1987
scaffold_641	128039	128324	286	128228	16	3.72175	trChip_vs_input_peak_5405
scaffold_1019	190074	190603	530	190287	25	3.71757	trChip_vs_input_peak_113
scaffold_135	2170497	2170742	246	2170560	25	3.71757	trChip_vs_input_peak_850
scaffold_258	571800	572125	326	572056	25	3.71757	trChip_vs_input_peak_2390
scaffold_37	3447582	3447891	310	3447685	25	3.71757	trChip_vs_input_peak_3606
scaffold_478	49399	49676	278	49555	25	3.71757	trChip_vs_input_peak_4496
scaffold_575	527737	528005	269	527834	25	3.71757	trChip_vs_input_peak_5067
scaffold_69	2165915	2166192	278	2166095	25	3.71757	trChip_vs_input_peak_5678
scaffold_106	753602	753842	241	753759	14	3.7162	trChip_vs_input_peak_205
scaffold_123	1008716	1008950	235	1008881	14	3.7162	trChip_vs_input_peak_620
scaffold_164	230569	230842	274	230731	14	3.7162	trChip_vs_input_peak_1273
scaffold_253	1608100	1608335	236	1608235	14	3.7162	trChip_vs_input_peak_2354
scaffold_477	299056	299316	261	299157	14	3.7162	trChip_vs_input_peak_4493
scaffold_52	730754	730997	244	730838	14	3.7162	trChip_vs_input_peak_4786
scaffold_58	548204	548592	389	548260	14	3.7162	trChip_vs_input_peak_5092
scaffold_891	215935	216208	274	216049	14	3.7162	trChip_vs_input_peak_6480
scaffold_10197	2969	3289	321	3079	23	3.71202	trChip_vs_input_peak_115
scaffold_1137	76871	77157	287	77028	23	3.71202	trChip_vs_input_peak_440
scaffold_12	5316240	5316489	250	5316422	23	3.71202	trChip_vs_input_peak_561
scaffold_13941	5646	6032	387	5900	23	3.71202	trChip_vs_input_peak_899
scaffold_167	1620717	1621066	350	1620859	23	3.71202	trChip_vs_input_peak_1317
scaffold_177	1214853	1215105	253	1214976	23	3.71202	trChip_vs_input_peak_1458
scaffold_179	611100	611359	260	611158	23	3.71202	trChip_vs_input_peak_1483
scaffold_216	1317869	1318226	358	1318051	23	3.71202	trChip_vs_input_peak_1897
scaffold_221	1291295	1291760	466	1291417	23	3.71202	trChip_vs_input_peak_2001
scaffold_222	989315	989668	354	989613	23	3.71202	trChip_vs_input_peak_2012

scaffold_28	48530	48764	235	48713	23	3.71202	trChip_vs_input_peak_2637
scaffold_303	788651	789101	451	788902	23	3.71202	trChip_vs_input_peak_2972
scaffold_32	226217	226466	250	226356	23	3.71202	trChip_vs_input_peak_3122
scaffold_355	110475	110709	235	110625	23	3.71202	trChip_vs_input_peak_3444
scaffold_398	870336	870849	514	870797	23	3.71202	trChip_vs_input_peak_3850
scaffold_401	523842	524210	369	523901	23	3.71202	trChip_vs_input_peak_3922
scaffold_456	675523	675811	289	675639	23	3.71202	trChip_vs_input_peak_4339
scaffold_5	402040	402304	265	402119	23	3.71202	trChip_vs_input_peak_4638
scaffold_571	426966	427339	374	427012	23	3.71202	trChip_vs_input_peak_5059
scaffold_627	566151	566443	293	566211	23	3.71202	trChip_vs_input_peak_5326
scaffold_709	453696	454025	330	453842	23	3.71202	trChip_vs_input_peak_5792
scaffold_827	358241	358538	298	358318	23	3.71202	trChip_vs_input_peak_6279
scaffold_830	340627	340912	286	340826	23	3.71202	trChip_vs_input_peak_6306
scaffold_88	1288701	1289168	468	1288964	23	3.71202	trChip_vs_input_peak_6450
scaffold_961	200345	200897	553	200689	23	3.71202	trChip_vs_input_peak_6682
scaffold_155	2103341	2103600	260	2103503	32	3.71012	trChip_vs_input_peak_1166
scaffold_23	1240400	1240688	289	1240550	32	3.71012	trChip_vs_input_peak_2091
scaffold_274	521585	522081	497	521756	32	3.71012	trChip_vs_input_peak_2578
scaffold_449	674889	675306	418	675175	32	3.71012	trChip_vs_input_peak_4297
scaffold_49	2080216	2080635	420	2080413	32	3.71012	trChip_vs_input_peak_4580
scaffold_506	190537	192025	1489	191855	32	3.71012	trChip_vs_input_peak_4708
scaffold_83	2581254	2581882	629	2581467	32	3.71012	trChip_vs_input_peak_6297
scaffold_13	209500	209744	245	209600	26	3.70918	trChip_vs_input_peak_726
scaffold_202	834955	835686	732	835528	26	3.70918	trChip_vs_input_peak_1767
scaffold_31	197091	197376	286	197231	26	3.70918	trChip_vs_input_peak_3019
scaffold_3186	585	847	263	706	26	3.70918	trChip_vs_input_peak_3111
scaffold_418	16666	17129	464	16896	26	3.70918	trChip_vs_input_peak_4054
scaffold_44	3137952	3138253	302	3138037	26	3.70918	trChip_vs_input_peak_4237
scaffold_135	2157912	2158378	467	2158063	41	3.70904	trChip_vs_input_peak_849
scaffold_25	1879600	1879887	288	1879743	41	3.70904	trChip_vs_input_peak_2296
scaffold_183	353078	353438	361	353211	17	3.70892	trChip_vs_input_peak_1538
scaffold_27	2479565	2479916	352	2479762	17	3.70892	trChip_vs_input_peak_2535
scaffold_5	389543	389782	240	389716	17	3.70892	trChip_vs_input_peak_4636
scaffold_515	338001	338246	246	338039	17	3.70892	trChip_vs_input_peak_4754
scaffold_619	157212	157466	255	157374	17	3.70892	trChip_vs_input_peak_5299
scaffold_146	509766	510150	385	510031	20	3.70592	trChip_vs_input_peak_999
scaffold_246	108918	109249	332	109066	27	3.70143	trChip_vs_input_peak_2246
scaffold_410	421329	421628	300	421475	27	3.70143	trChip_vs_input_peak_3997
scaffold_491	27383	27948	566	27709	27	3.70143	trChip_vs_input_peak_4596
scaffold_94	197186	197423	238	197281	27	3.70143	trChip_vs_input_peak_6614

scaffold_173	1961861	1962221	361	1962061	37	3.69789	trChip_vs_input_peak_1395
scaffold_12	5221406	5221749	344	5221523	18	3.69752	trChip_vs_input_peak_559
scaffold_134	838926	839209	284	839076	18	3.69752	trChip_vs_input_peak_812
scaffold_17	4843463	4843697	235	4843611	18	3.69752	trChip_vs_input_peak_1353
scaffold_228	64989	65325	337	65116	18	3.69752	trChip_vs_input_peak_2070
scaffold_267	581855	582089	235	581935	18	3.69752	trChip_vs_input_peak_2478
scaffold_299	683327	683586	260	683413	18	3.69752	trChip_vs_input_peak_2863
scaffold_39	872985	873266	282	873145	18	3.69752	trChip_vs_input_peak_3787
scaffold_447	439627	439861	235	439774	18	3.69752	trChip_vs_input_peak_4272
scaffold_777	136864	137247	384	137042	18	3.69752	trChip_vs_input_peak_6067
scaffold_169	1633483	1634000	518	1633917	22	3.69586	trChip_vs_input_peak_1327
scaffold_115	1326509	1326747	239	1326596	28	3.69423	trChip_vs_input_peak_467
scaffold_81	2172800	2173158	359	2173016	28	3.69423	trChip_vs_input_peak_6209
scaffold_227	745683	745971	289	745861	43	3.68788	trChip_vs_input_peak_2063
scaffold_186	1539021	1539445	425	1539203	29	3.68755	trChip_vs_input_peak_1562
scaffold_355	1108704	1109007	304	1108882	29	3.68755	trChip_vs_input_peak_3454
scaffold_19	3798828	3799074	247	3798973	19	3.68731	trChip_vs_input_peak_1605
scaffold_225	1191260	1191541	282	1191317	19	3.68731	trChip_vs_input_peak_2045
scaffold_227	726821	727080	260	726901	19	3.68731	trChip_vs_input_peak_2062
scaffold_23	4843934	4844255	322	4844157	19	3.68731	trChip_vs_input_peak_2106
scaffold_31	3661531	3661895	365	3661716	19	3.68731	trChip_vs_input_peak_3048
scaffold_391	692922	693314	393	693154	19	3.68731	trChip_vs_input_peak_3804
scaffold_42	1785083	1785391	309	1785246	19	3.68731	trChip_vs_input_peak_4081
scaffold_475	586450	586891	442	586750	19	3.68731	trChip_vs_input_peak_4477
scaffold_610	28374	28671	298	28527	19	3.68731	trChip_vs_input_peak_5269
scaffold_757	198232	198523	292	198293	19	3.68731	trChip_vs_input_peak_5958
scaffold_11	4998539	4998773	235	4998587	18	3.68727	trChip_vs_input_peak_345
scaffold_131	1052296	1052530	235	1052333	17	3.68723	trChip_vs_input_peak_766
scaffold_11	3396251	3396555	305	3396430	34	3.68349	trChip_vs_input_peak_331
scaffold_1348	72285	72859	575	72626	34	3.68349	trChip_vs_input_peak_830
scaffold_154	401198	401528	331	401401	34	3.68349	trChip_vs_input_peak_1119
scaffold_222	235477	235911	435	235683	34	3.68349	trChip_vs_input_peak_2005
scaffold_224	1593662	1593925	264	1593795	34	3.68349	trChip_vs_input_peak_2036
scaffold_407	505349	505843	495	505627	34	3.68349	trChip_vs_input_peak_3957
scaffold_478	304425	304771	347	304584	34	3.68349	trChip_vs_input_peak_4499
scaffold_55	2665964	2666581	618	2666326	34	3.68349	trChip_vs_input_peak_4949
scaffold_652	248497	249201	705	248707	34	3.68349	trChip_vs_input_peak_5472
scaffold_85	2586090	2586402	313	2586256	34	3.68349	trChip_vs_input_peak_6358
scaffold_865	60429	60814	386	60680	34	3.68349	trChip_vs_input_peak_6406
scaffold_203	1491489	1491945	457	1491649	20	3.67813	trChip_vs_input_peak_1782

scaffold_261	950473	950861	389	950663	20	3.67813	trChip_vs_input_peak_2426
scaffold_267	583958	584359	402	584187	20	3.67813	trChip_vs_input_peak_2479
scaffold_364	163206	163473	268	163346	20	3.67813	trChip_vs_input_peak_3520
scaffold_40	1101803	1102064	262	1101926	20	3.67813	trChip_vs_input_peak_3900
scaffold_821	240872	241359	488	241246	20	3.67813	trChip_vs_input_peak_6255
scaffold_830	327541	327827	287	327598	20	3.67813	trChip_vs_input_peak_6305
scaffold_84	1522912	1523273	362	1523095	20	3.67813	trChip_vs_input_peak_6325
scaffold_855	89224	89463	240	89357	20	3.67813	trChip_vs_input_peak_6376
scaffold_567	556172	556406	235	556199	17	3.67649	trChip_vs_input_peak_5034
scaffold_10	1668728	1669119	392	1668935	25	3.67608	trChip_vs_input_peak_51
scaffold_10	3801844	3802326	483	3802126	25	3.67608	trChip_vs_input_peak_60
scaffold_1080	120319	121198	880	120857	25	3.67608	trChip_vs_input_peak_270
scaffold_20	633130	633630	501	633410	25	3.67608	trChip_vs_input_peak_1726
scaffold_202	627801	628250	450	627939	25	3.67608	trChip_vs_input_peak_1763
scaffold_205	1608773	1609372	600	1608941	25	3.67608	trChip_vs_input_peak_1790
scaffold_216	351280	351657	378	351510	25	3.67608	trChip_vs_input_peak_1895
scaffold_22	2020786	2021150	365	2020877	25	3.67608	trChip_vs_input_peak_1949
scaffold_22	2600880	2601188	309	2600951	25	3.67608	trChip_vs_input_peak_1964
scaffold_222	1696330	1696579	250	1696437	25	3.67608	trChip_vs_input_peak_2018
scaffold_243	1174281	1174767	487	1174570	25	3.67608	trChip_vs_input_peak_2216
scaffold_247	1112628	1113383	756	1113068	25	3.67608	trChip_vs_input_peak_2265
scaffold_266	819244	819707	464	819536	25	3.67608	trChip_vs_input_peak_2476
scaffold_274	788920	789199	280	789036	25	3.67608	trChip_vs_input_peak_2579
scaffold_281	1163108	1163406	299	1163197	25	3.67608	trChip_vs_input_peak_2693
scaffold_294	1136132	1136396	265	1136334	25	3.67608	trChip_vs_input_peak_2824
scaffold_319	484695	485080	386	484812	25	3.67608	trChip_vs_input_peak_3114
scaffold_322	1292783	1293062	280	1292896	25	3.67608	trChip_vs_input_peak_3159
scaffold_325	900916	901506	591	901287	25	3.67608	trChip_vs_input_peak_3172
scaffold_335	1039871	1040158	288	1040027	25	3.67608	trChip_vs_input_peak_3264
scaffold_383	376871	377427	557	377051	25	3.67608	trChip_vs_input_peak_3750
scaffold_401	316031	316431	401	316263	25	3.67608	trChip_vs_input_peak_3921
scaffold_409	429765	430340	576	430051	25	3.67608	trChip_vs_input_peak_3967
scaffold_448	267577	267819	243	267691	25	3.67608	trChip_vs_input_peak_4280
scaffold_474	413811	414053	243	413959	25	3.67608	trChip_vs_input_peak_4452
scaffold_49	79731	80008	278	79823	25	3.67608	trChip_vs_input_peak_4567
scaffold_53	1052000	1052401	402	1052343	25	3.67608	trChip_vs_input_peak_4833
scaffold_562	744589	744949	361	744781	25	3.67608	trChip_vs_input_peak_5018
scaffold_60	23827	24186	360	23981	25	3.67608	trChip_vs_input_peak_5217
scaffold_77	3026889	3027495	607	3027429	25	3.67608	trChip_vs_input_peak_6041
scaffold_923	243696	243949	254	243902	25	3.67608	trChip_vs_input_peak_6584

scaffold_931	82709	83175	467	83027	25	3.67608	trChip_vs_input_peak_6602
scaffold_931	90923	91179	257	91027	25	3.67608	trChip_vs_input_peak_6604
scaffold_96	220844	221138	295	221052	25	3.67608	trChip_vs_input_peak_6665
scaffold_96	909177	909422	246	909260	25	3.67608	trChip_vs_input_peak_6668
scaffold_134	1029311	1029735	425	1029515	31	3.67549	trChip_vs_input_peak_813
scaffold_125	1100510	1100744	235	1100655	14	3.67419	trChip_vs_input_peak_657
scaffold_22	3980917	3981206	290	3981007	32	3.67003	trChip_vs_input_peak_1974
scaffold_321	787851	788099	249	787933	21	3.66982	trChip_vs_input_peak_3141
scaffold_363	439581	440152	572	439996	21	3.66982	trChip_vs_input_peak_3508
scaffold_565	711266	711651	386	711478	21	3.66982	trChip_vs_input_peak_5027
scaffold_72	364675	365412	738	365293	21	3.66982	trChip_vs_input_peak_5829
scaffold_815	299924	300167	244	299993	21	3.66982	trChip_vs_input_peak_6225
scaffold_241	1601747	1602156	410	1601960	45	3.66878	trChip_vs_input_peak_2203
scaffold_343	407379	407805	427	407652	45	3.66878	trChip_vs_input_peak_3356
scaffold_474	540535	541006	472	540812	45	3.66878	trChip_vs_input_peak_4465
scaffold_2	957113	957347	235	957139	17	3.6658	trChip_vs_input_peak_1692
scaffold_1344	87890	88186	297	87998	33	3.66491	trChip_vs_input_peak_827
scaffold_485	120106	120397	292	120299	33	3.66491	trChip_vs_input_peak_4545
scaffold_12198	7673	8000	328	7815	22	3.66227	trChip_vs_input_peak_590
scaffold_17	887331	887906	576	887646	22	3.66227	trChip_vs_input_peak_1340
scaffold_2	5176839	5177073	235	5177006	22	3.66227	trChip_vs_input_peak_1714
scaffold_227	792146	792459	314	792262	22	3.66227	trChip_vs_input_peak_2064
scaffold_257	8890	9136	247	8930	22	3.66227	trChip_vs_input_peak_2377
scaffold_305	1184048	1184330	283	1184222	22	3.66227	trChip_vs_input_peak_2986
scaffold_76	2356195	2356636	442	2356281	22	3.66227	trChip_vs_input_peak_5973
scaffold_106	1569882	1570321	440	1570109	16	3.66091	trChip_vs_input_peak_208
scaffold_124	2181673	2181922	250	2181725	16	3.66091	trChip_vs_input_peak_643
scaffold_146	1610738	1610983	246	1610887	16	3.66091	trChip_vs_input_peak_1007
scaffold_1585	45791	46253	463	45948	16	3.66091	trChip_vs_input_peak_1195
scaffold_17	649086	649423	338	649379	16	3.66091	trChip_vs_input_peak_1338
scaffold_170	629662	629916	255	629806	16	3.66091	trChip_vs_input_peak_1364
scaffold_205	1638082	1638394	313	1638238	16	3.66091	trChip_vs_input_peak_1792
scaffold_226	340890	341205	316	341047	16	3.66091	trChip_vs_input_peak_2048
scaffold_3	2828219	2828453	235	2828323	16	3.66091	trChip_vs_input_peak_2881
scaffold_312	701590	701951	362	701808	16	3.66091	trChip_vs_input_peak_3078
scaffold_333	1204586	1204867	282	1204767	16	3.66091	trChip_vs_input_peak_3248
scaffold_334	505275	505523	249	505466	16	3.66091	trChip_vs_input_peak_3254
scaffold_424	520848	521099	252	520902	16	3.66091	trChip_vs_input_peak_4109
scaffold_43	212165	212672	508	212354	16	3.66091	trChip_vs_input_peak_4157
scaffold_448	999151	999617	467	999244	16	3.66091	trChip_vs_input_peak_4288

scaffold_639	88573	88858	286	88740	16	3.66091	trChip_vs_input_peak_5374
scaffold_666	340360	340594	235	340523	16	3.66091	trChip_vs_input_peak_5526
scaffold_77	2813174	2813568	395	2813355	16	3.66091	trChip_vs_input_peak_6036
scaffold_786	135989	136223	235	136191	16	3.66091	trChip_vs_input_peak_6105
scaffold_943	265810	266053	244	265956	16	3.66091	trChip_vs_input_peak_6628
scaffold_12	3362615	3363038	424	3362912	34	3.6601	trChip_vs_input_peak_547
scaffold_354	934748	935097	350	934944	34	3.6601	trChip_vs_input_peak_3441
scaffold_11	1989069	1989521	453	1989393	36	3.66005	trChip_vs_input_peak_325
scaffold_145	369801	370119	319	369976	36	3.66005	trChip_vs_input_peak_979
scaffold_1489	31682	32592	911	32258	36	3.66005	trChip_vs_input_peak_1035
scaffold_407	963518	963958	441	963805	36	3.66005	trChip_vs_input_peak_3958
scaffold_427	66116	67051	936	66578	36	3.66005	trChip_vs_input_peak_4129
scaffold_207	1143805	1144093	289	1143903	23	3.65537	trChip_vs_input_peak_1820
scaffold_260	183093	183384	292	183208	23	3.65537	trChip_vs_input_peak_2413
scaffold_47	885964	886257	294	886133	23	3.65537	trChip_vs_input_peak_4405
scaffold_617	58337	58746	410	58436	23	3.65537	trChip_vs_input_peak_5286
scaffold_560	350839	351785	947	351157	16	3.65326	trChip_vs_input_peak_4991
scaffold_253	987785	988069	285	987982	24	3.64905	trChip_vs_input_peak_2352
scaffold_103	430812	431175	364	430983	27	3.64582	trChip_vs_input_peak_137
scaffold_139	70369	70775	407	70658	27	3.64582	trChip_vs_input_peak_888
scaffold_143	1499450	1499767	318	1499659	27	3.64582	trChip_vs_input_peak_956
scaffold_159	2159194	2159813	620	2159720	27	3.64582	trChip_vs_input_peak_1210
scaffold_17	2269140	2269380	241	2269240	27	3.64582	trChip_vs_input_peak_1345
scaffold_19	1278120	1278899	780	1278670	27	3.64582	trChip_vs_input_peak_1596
scaffold_21	4714542	4714837	296	4714669	27	3.64582	trChip_vs_input_peak_1852
scaffold_22	4026203	4026685	483	4026339	27	3.64582	trChip_vs_input_peak_1977
scaffold_23	3503651	3504147	497	3503955	27	3.64582	trChip_vs_input_peak_2099
scaffold_230	1012679	1013525	847	1012933	27	3.64582	trChip_vs_input_peak_2112
scaffold_267	952776	953389	614	953000	27	3.64582	trChip_vs_input_peak_2482
scaffold_278	805696	805955	260	805865	27	3.64582	trChip_vs_input_peak_2611
scaffold_285	925120	925474	355	925272	27	3.64582	trChip_vs_input_peak_2738
scaffold_342	898986	899560	575	899434	27	3.64582	trChip_vs_input_peak_3352
scaffold_407	504487	505131	645	504626	27	3.64582	trChip_vs_input_peak_3956
scaffold_417	218442	219208	767	218842	27	3.64582	trChip_vs_input_peak_4047
scaffold_43	2158406	2159589	1184	2159428	27	3.64582	trChip_vs_input_peak_4166
scaffold_47	2625619	2626174	556	2625873	27	3.64582	trChip_vs_input_peak_4419
scaffold_546	475065	475314	250	475224	27	3.64582	trChip_vs_input_peak_4921
scaffold_567	581411	581669	259	581575	27	3.64582	trChip_vs_input_peak_5039
scaffold_655	182406	183148	743	182952	27	3.64582	trChip_vs_input_peak_5475
scaffold_66	2291029	2291285	257	2291162	27	3.64582	trChip_vs_input_peak_5498

scaffold_69	2421475	2422152	678	2421788	27	3.64582	trChip_vs_input_peak_5680
scaffold_699	250581	250851	271	250716	27	3.64582	trChip_vs_input_peak_5715
scaffold_101	2273690	2274319	630	2273895	25	3.64323	trChip_vs_input_peak_97
scaffold_117	2340290	2340591	302	2340425	25	3.64323	trChip_vs_input_peak_491
scaffold_15	2903909	2904175	267	2904033	25	3.64323	trChip_vs_input_peak_1060
scaffold_282	932339	932670	332	932482	25	3.64323	trChip_vs_input_peak_2707
scaffold_398	933960	934450	491	934265	25	3.64323	trChip_vs_input_peak_3855
scaffold_568	682316	682568	253	682438	25	3.64323	trChip_vs_input_peak_5045
scaffold_640	328660	328977	318	328746	25	3.64323	trChip_vs_input_peak_5400
scaffold_12	1847413	1847776	364	1847579	38	3.63928	trChip_vs_input_peak_538
scaffold_120	380425	380724	300	380518	38	3.63928	trChip_vs_input_peak_567
scaffold_224	1618914	1619340	427	1619157	38	3.63928	trChip_vs_input_peak_2037
scaffold_229	738081	738524	444	738339	38	3.63928	trChip_vs_input_peak_2080
scaffold_298	943357	943647	291	943541	38	3.63928	trChip_vs_input_peak_2857
scaffold_522	216992	217235	244	217153	38	3.63928	trChip_vs_input_peak_4799
scaffold_586	720252	720708	457	720484	38	3.63928	trChip_vs_input_peak_5133
scaffold_606	604543	605088	546	604764	38	3.63928	trChip_vs_input_peak_5252
scaffold_649	70980	71262	283	71119	38	3.63928	trChip_vs_input_peak_5432
scaffold_55	116460	117026	567	116849	26	3.63786	trChip_vs_input_peak_4934
scaffold_12	3741848	3742341	494	3741937	27	3.63289	trChip_vs_input_peak_552
scaffold_199	1809793	1810033	241	1809930	27	3.63289	trChip_vs_input_peak_1684
scaffold_24	1818111	1818373	263	1818196	27	3.63289	trChip_vs_input_peak_2180
scaffold_248	1442269	1442534	266	1442433	27	3.63289	trChip_vs_input_peak_2281
scaffold_48	3101861	3102225	365	3102085	27	3.63289	trChip_vs_input_peak_4523
scaffold_543	502848	503311	464	503063	27	3.63289	trChip_vs_input_peak_4906
scaffold_687	371160	371409	250	371257	27	3.63289	trChip_vs_input_peak_5648
scaffold_7	5667172	5667406	235	5667238	27	3.63289	trChip_vs_input_peak_5747
scaffold_201	1413353	1413587	235	1413554	13	3.6324	trChip_vs_input_peak_1753
scaffold_279	448304	448538	235	448367	13	3.6324	trChip_vs_input_peak_2622
scaffold_272	1057190	1057764	575	1057316	28	3.62827	trChip_vs_input_peak_2565
scaffold_461	250345	250732	388	250462	28	3.62827	trChip_vs_input_peak_4370
scaffold_500	507428	507757	330	507564	28	3.62827	trChip_vs_input_peak_4671
scaffold_96	1130264	1130555	292	1130495	28	3.62827	trChip_vs_input_peak_6672
scaffold_519	360154	360507	354	360323	18	3.627	trChip_vs_input_peak_4779
scaffold_22	4926260	4926508	249	4926406	20	3.62378	trChip_vs_input_peak_1982
scaffold_309	547372	547655	284	547507	14	3.62352	trChip_vs_input_peak_3010
scaffold_58	2797753	2798272	520	2798115	14	3.62352	trChip_vs_input_peak_5100
scaffold_99	2324052	2324307	256	2324089	14	3.62352	trChip_vs_input_peak_6741
scaffold_102	1425512	1426244	733	1425957	40	3.62073	trChip_vs_input_peak_120
scaffold_1518	55068	55627	560	55302	40	3.62073	trChip_vs_input_peak_1094

scaffold_248	832324	832739	416	832520	40	3.62073	trChip_vs_input_peak_2276
scaffold_52	3518836	3519093	258	3518991	40	3.62073	trChip_vs_input_peak_4793
scaffold_849	313986	314309	324	314164	40	3.62073	trChip_vs_input_peak_6343
scaffold_101	1163310	1163767	458	1163507	29	3.61999	trChip_vs_input_peak_88
scaffold_1081	58235	58741	507	58516	29	3.61999	trChip_vs_input_peak_273
scaffold_110	2334806	2335225	420	2334861	29	3.61999	trChip_vs_input_peak_365
scaffold_113	1770883	1771640	758	1771442	29	3.61999	trChip_vs_input_peak_432
scaffold_123	2122043	2123008	966	2122266	29	3.61999	trChip_vs_input_peak_626
scaffold_158	1103653	1104874	1222	1104397	29	3.61999	trChip_vs_input_peak_1190
scaffold_167	1409284	1409545	262	1409456	29	3.61999	trChip_vs_input_peak_1315
scaffold_17	5199407	5200181	775	5199838	29	3.61999	trChip_vs_input_peak_1361
scaffold_20	2650767	2651204	438	2650971	29	3.61999	trChip_vs_input_peak_1739
scaffold_217	91250	91754	505	91538	29	3.61999	trChip_vs_input_peak_1900
scaffold_223	301276	301813	538	301583	29	3.61999	trChip_vs_input_peak_2020
scaffold_246	376004	376439	436	376096	29	3.61999	trChip_vs_input_peak_2248
scaffold_283	939630	940038	409	939836	29	3.61999	trChip_vs_input_peak_2715
scaffold_292	1188492	1188738	247	1188675	29	3.61999	trChip_vs_input_peak_2810
scaffold_3	159750	160049	300	159870	29	3.61999	trChip_vs_input_peak_2865
scaffold_30	317148	317415	268	317255	29	3.61999	trChip_vs_input_peak_2910
scaffold_319	512228	512626	399	512269	29	3.61999	trChip_vs_input_peak_3115
scaffold_34	3562289	3562796	508	3562456	29	3.61999	trChip_vs_input_peak_3331
scaffold_37	3132594	3133373	780	3133235	29	3.61999	trChip_vs_input_peak_3602
scaffold_447	919317	919606	290	919486	29	3.61999	trChip_vs_input_peak_4276
scaffold_46	1536152	1536641	490	1536520	29	3.61999	trChip_vs_input_peak_4356
scaffold_461	889776	890051	276	889826	29	3.61999	trChip_vs_input_peak_4376
scaffold_466	310589	310937	349	310712	29	3.61999	trChip_vs_input_peak_4387
scaffold_486	474482	474774	293	474645	29	3.61999	trChip_vs_input_peak_4551
scaffold_6	4388401	4388695	295	4388607	29	3.61999	trChip_vs_input_peak_5207
scaffold_62	1614983	1615520	538	1615294	29	3.61999	trChip_vs_input_peak_5309
scaffold_860	305878	306128	251	305943	29	3.61999	trChip_vs_input_peak_6394
scaffold_87	617058	617577	520	617261	29	3.61999	trChip_vs_input_peak_6415
scaffold_139	308130	308605	476	308240	30	3.61996	trChip_vs_input_peak_893
scaffold_250	954074	954317	244	954200	30	3.61996	trChip_vs_input_peak_2314
scaffold_365	1106089	1106440	352	1106302	30	3.61996	trChip_vs_input_peak_3524
scaffold_1128	161464	161896	433	161816	18	3.61841	trChip_vs_input_peak_418
scaffold_148	2047922	2048181	260	2048093	18	3.61841	trChip_vs_input_peak_1032
scaffold_151	2072258	2072578	321	2072356	18	3.61841	trChip_vs_input_peak_1088
scaffold_155	1533705	1534017	313	1533895	18	3.61841	trChip_vs_input_peak_1151
scaffold_189	1818877	1819376	500	1818932	18	3.61841	trChip_vs_input_peak_1589
scaffold_19	1299228	1299638	411	1299475	18	3.61841	trChip_vs_input_peak_1597

scaffold_199	1631735	1632026	292	1631951	18	3.61841	trChip_vs_input_peak_1680
scaffold_232	142412	142675	264	142587	18	3.61841	trChip_vs_input_peak_2123
scaffold_309	575862	576219	358	575994	18	3.61841	trChip_vs_input_peak_3012
scaffold_316	738531	738782	252	738610	18	3.61841	trChip_vs_input_peak_3102
scaffold_34	729601	729941	341	729747	18	3.61841	trChip_vs_input_peak_3310
scaffold_347	870423	870681	259	870476	18	3.61841	trChip_vs_input_peak_3375
scaffold_352	762718	762977	260	762924	18	3.61841	trChip_vs_input_peak_3429
scaffold_355	136118	136459	342	136319	18	3.61841	trChip_vs_input_peak_3445
scaffold_370	622948	623341	394	623138	18	3.61841	trChip_vs_input_peak_3610
scaffold_370	697517	697824	308	697616	18	3.61841	trChip_vs_input_peak_3612
scaffold_381	469984	471017	1034	470092	18	3.61841	trChip_vs_input_peak_3739
scaffold_50	3699503	3699925	423	3699668	18	3.61841	trChip_vs_input_peak_4667
scaffold_531	440692	440926	235	440744	18	3.61841	trChip_vs_input_peak_4846
scaffold_55	2564720	2565086	367	2565023	18	3.61841	trChip_vs_input_peak_4946
scaffold_567	572283	572581	299	572354	18	3.61841	trChip_vs_input_peak_5038
scaffold_58	522401	522890	490	522754	18	3.61841	trChip_vs_input_peak_5087
scaffold_64	1646606	1646983	378	1646798	18	3.61841	trChip_vs_input_peak_5391
scaffold_682	160889	161285	397	161011	18	3.61841	trChip_vs_input_peak_5634
scaffold_690	252949	253206	258	253051	18	3.61841	trChip_vs_input_peak_5685
scaffold_398	929060	929488	429	929160	18	3.61715	trChip_vs_input_peak_3852
scaffold_560	665247	665538	292	665395	31	3.61621	trChip_vs_input_peak_5006
scaffold_11	5243411	5243849	439	5243505	15	3.61579	trChip_vs_input_peak_348
scaffold_297	965733	965967	235	965816	15	3.61579	trChip_vs_input_peak_2850
scaffold_441	742901	743135	235	742950	15	3.61579	trChip_vs_input_peak_4252
scaffold_562	697243	697500	258	697407	15	3.61579	trChip_vs_input_peak_5015
scaffold_6	6338528	6338769	242	6338558	15	3.61579	trChip_vs_input_peak_5216
scaffold_1079	62059	62395	337	62187	17	3.61329	trChip_vs_input_peak_245
scaffold_202	209328	209969	642	209745	17	3.61329	trChip_vs_input_peak_1755
scaffold_1122	14515	14749	235	14610	16	3.60899	trChip_vs_input_peak_410
scaffold_121	1097937	1098171	235	1098013	16	3.60899	trChip_vs_input_peak_578
scaffold_14	4078440	4078682	243	4078504	16	3.60899	trChip_vs_input_peak_915
scaffold_177	1963629	1963914	286	1963807	16	3.60899	trChip_vs_input_peak_1467
scaffold_197	1613484	1613742	259	1613634	16	3.60899	trChip_vs_input_peak_1659
scaffold_21	742214	742463	250	742323	16	3.60899	trChip_vs_input_peak_1839
scaffold_21	3769714	3770096	383	3769970	16	3.60899	trChip_vs_input_peak_1850
scaffold_27	3150384	3150644	261	3150509	16	3.60899	trChip_vs_input_peak_2541
scaffold_671	12729	12996	268	12849	16	3.60899	trChip_vs_input_peak_5572
scaffold_696	452480	452934	455	452708	16	3.60899	trChip_vs_input_peak_5705
scaffold_63	3096432	3096745	314	3096648	11	3.60775	trChip_vs_input_peak_5345
scaffold_1	5807833	5808187	355	5808006	42	3.60407	trChip_vs_input_peak_28

scaffold_27	938621	938883	263	938767	42	3.60407	trChip_vs_input_peak_2512
scaffold_58	2176876	2177187	312	2176944	42	3.60407	trChip_vs_input_peak_5097
scaffold_176	1410570	1410824	255	1410613	17	3.60297	trChip_vs_input_peak_1446
scaffold_241	594765	595194	430	594795	17	3.60297	trChip_vs_input_peak_2195
scaffold_261	932790	933184	395	932967	17	3.60297	trChip_vs_input_peak_2422
scaffold_302	558715	559130	416	558955	17	3.60297	trChip_vs_input_peak_2963
scaffold_398	927354	927595	242	927485	16	3.59809	trChip_vs_input_peak_3851
scaffold_155	1773795	1774268	474	1774026	31	3.59769	trChip_vs_input_peak_1156
scaffold_189	968865	969355	491	969033	31	3.59769	trChip_vs_input_peak_1583
scaffold_220	1425797	1426086	290	1426003	31	3.59769	trChip_vs_input_peak_1989
scaffold_285	1509193	1509794	602	1509423	31	3.59769	trChip_vs_input_peak_2742
scaffold_307	1318872	1319564	693	1319025	31	3.59769	trChip_vs_input_peak_3000
scaffold_31	3221477	3221802	326	3221631	31	3.59769	trChip_vs_input_peak_3040
scaffold_525	20066	20305	240	20111	31	3.59769	trChip_vs_input_peak_4805
scaffold_582	332814	333245	432	333039	31	3.59769	trChip_vs_input_peak_5113
scaffold_744	161290	161873	584	161651	31	3.59769	trChip_vs_input_peak_5927
scaffold_144	774532	774894	363	774857	18	3.5976	trChip_vs_input_peak_966
scaffold_194	511575	511824	250	511764	18	3.5976	trChip_vs_input_peak_1637
scaffold_275	1137657	1137945	289	1137818	18	3.5976	trChip_vs_input_peak_2588
scaffold_382	353296	353597	302	353339	18	3.5976	trChip_vs_input_peak_3741
scaffold_564	465244	465617	374	465338	18	3.5976	trChip_vs_input_peak_5023
scaffold_649	311971	312423	453	312301	18	3.5976	trChip_vs_input_peak_5438
scaffold_69	667812	668071	260	667911	18	3.5976	trChip_vs_input_peak_5662
scaffold_132	36905	37183	279	37000	19	3.59278	trChip_vs_input_peak_777
scaffold_193	496774	497008	235	496900	19	3.59278	trChip_vs_input_peak_1631
scaffold_207	605339	605573	235	605423	19	3.59278	trChip_vs_input_peak_1814
scaffold_212	796750	796994	245	796894	19	3.59278	trChip_vs_input_peak_1875
scaffold_320	528067	528301	235	528270	19	3.59278	trChip_vs_input_peak_3132
scaffold_461	468744	469176	433	469049	19	3.59278	trChip_vs_input_peak_4371
scaffold_558	89871	90134	264	90059	19	3.59278	trChip_vs_input_peak_4971
scaffold_571	613366	613613	248	613493	19	3.59278	trChip_vs_input_peak_5062
scaffold_310	905838	906072	235	905982	17	3.59271	trChip_vs_input_peak_3058
scaffold_1655	5297	5546	250	5419	15	3.59262	trChip_vs_input_peak_1292
scaffold_24	3955710	3955981	272	3955878	20	3.58843	trChip_vs_input_peak_2184
scaffold_25	1108090	1108364	275	1108266	20	3.58843	trChip_vs_input_peak_2293
scaffold_55	2838677	2839158	482	2838864	20	3.58843	trChip_vs_input_peak_4952
scaffold_571	542695	543138	444	542838	20	3.58843	trChip_vs_input_peak_5061
scaffold_76	2627003	2627509	507	2627209	20	3.58843	trChip_vs_input_peak_5988
scaffold_831	217571	217805	235	217768	20	3.58843	trChip_vs_input_peak_6307
scaffold_856	106014	106289	276	106157	20	3.58843	trChip_vs_input_peak_6378

scaffold_104	1253981	1254248	268	1254059	20	3.58471	trChip_vs_input_peak_156
scaffold_1051	214333	214924	592	214470	20	3.58471	trChip_vs_input_peak_192
scaffold_1218	101714	102161	448	101818	20	3.58471	trChip_vs_input_peak_589
scaffold_1257	78018	78299	282	78101	20	3.58471	trChip_vs_input_peak_669
scaffold_132	1558912	1559431	520	1558945	20	3.58471	trChip_vs_input_peak_789
scaffold_1347	87073	87436	364	87272	20	3.58471	trChip_vs_input_peak_829
scaffold_152	1871048	1871301	254	1871222	20	3.58471	trChip_vs_input_peak_1100
scaffold_197	1830117	1830461	345	1830300	20	3.58471	trChip_vs_input_peak_1660
scaffold_202	505473	505707	235	505621	20	3.58471	trChip_vs_input_peak_1760
scaffold_217	304336	304797	462	304626	20	3.58471	trChip_vs_input_peak_1903
scaffold_23	3911744	3912084	341	3911898	20	3.58471	trChip_vs_input_peak_2104
scaffold_239	412310	412642	333	412438	20	3.58471	trChip_vs_input_peak_2174
scaffold_27	3160748	3161126	379	3160933	20	3.58471	trChip_vs_input_peak_2542
scaffold_276	1446470	1446705	236	1446547	20	3.58471	trChip_vs_input_peak_2592
scaffold_3	4401216	4401462	247	4401243	20	3.58471	trChip_vs_input_peak_2890
scaffold_3	4581129	4581448	320	4581330	20	3.58471	trChip_vs_input_peak_2894
scaffold_38	428644	428897	254	428781	20	3.58471	trChip_vs_input_peak_3688
scaffold_38	957683	958191	509	958025	20	3.58471	trChip_vs_input_peak_3696
scaffold_38	1870885	1871184	300	1870982	20	3.58471	trChip_vs_input_peak_3702
scaffold_400	450625	451134	510	450944	20	3.58471	trChip_vs_input_peak_3917
scaffold_423	442098	442356	259	442140	20	3.58471	trChip_vs_input_peak_4103
scaffold_441	395609	395914	306	395813	20	3.58471	trChip_vs_input_peak_4249
scaffold_444	922383	922715	333	922539	20	3.58471	trChip_vs_input_peak_4262
scaffold_446	932906	933450	545	933310	20	3.58471	trChip_vs_input_peak_4269
scaffold_457	445344	445685	342	445481	20	3.58471	trChip_vs_input_peak_4342
scaffold_504	442498	443027	530	442626	20	3.58471	trChip_vs_input_peak_4700
scaffold_5620	3136	3455	320	3257	20	3.58471	trChip_vs_input_peak_5019
scaffold_573	699243	699595	353	699394	20	3.58471	trChip_vs_input_peak_5065
scaffold_581	159497	159756	260	159627	20	3.58471	trChip_vs_input_peak_5108
scaffold_596	316008	316245	238	316238	20	3.58471	trChip_vs_input_peak_5172
scaffold_676	339290	339648	359	339481	20	3.58471	trChip_vs_input_peak_5602
scaffold_726	62068	62302	235	62262	20	3.58471	trChip_vs_input_peak_5859
scaffold_77	3042112	3042588	477	3042286	20	3.58471	trChip_vs_input_peak_6044
scaffold_8286	17	320	304	126	20	3.58471	trChip_vs_input_peak_6283
scaffold_967	223141	223431	291	223349	20	3.58471	trChip_vs_input_peak_6686
scaffold_102	2270153	2270390	238	2270285	21	3.58449	trChip_vs_input_peak_126
scaffold_1266	100660	100920	261	100724	21	3.58449	trChip_vs_input_peak_682
scaffold_176	1364171	1364605	435	1364289	21	3.58449	trChip_vs_input_peak_1445
scaffold_317	294350	294627	278	294409	21	3.58449	trChip_vs_input_peak_3103
scaffold_469	757034	757279	246	757112	21	3.58449	trChip_vs_input_peak_4398

scaffold_17	1291776	1292022	247	1291977	22	3.5809	trChip_vs_input_peak_1341
scaffold_248	1499324	1499808	485	1499526	22	3.5809	trChip_vs_input_peak_2284
scaffold_319	637348	637795	448	637578	22	3.5809	trChip_vs_input_peak_3116
scaffold_409	278753	279074	322	278937	22	3.5809	trChip_vs_input_peak_3965
scaffold_68	1274768	1275106	339	1274970	22	3.5809	trChip_vs_input_peak_5614
scaffold_695	492260	492772	513	492605	22	3.5809	trChip_vs_input_peak_5702
scaffold_90	2718523	2718757	235	2718640	22	3.5809	trChip_vs_input_peak_6512
scaffold_135	1969778	1970391	614	1970196	33	3.57825	trChip_vs_input_peak_845
scaffold_15	4034245	4035380	1136	4034490	33	3.57825	trChip_vs_input_peak_1063
scaffold_210	1222751	1223428	678	1223308	33	3.57825	trChip_vs_input_peak_1858
scaffold_221	1325363	1325995	633	1325799	33	3.57825	trChip_vs_input_peak_2002
scaffold_225	640305	640661	357	640390	33	3.57825	trChip_vs_input_peak_2039
scaffold_265	1089504	1090349	846	1090030	33	3.57825	trChip_vs_input_peak_2464
scaffold_285	1379487	1379721	235	1379633	33	3.57825	trChip_vs_input_peak_2740
scaffold_287	444065	444364	300	444196	33	3.57825	trChip_vs_input_peak_2751
scaffold_47	2199482	2199828	347	2199707	33	3.57825	trChip_vs_input_peak_4417
scaffold_5	1595869	1596348	480	1596076	33	3.57825	trChip_vs_input_peak_4645
scaffold_502	309938	310429	492	310113	33	3.57825	trChip_vs_input_peak_4682
scaffold_596	241332	241661	330	241428	33	3.57825	trChip_vs_input_peak_5171
scaffold_33	3137983	3138372	390	3138210	23	3.57761	trChip_vs_input_peak_3222
scaffold_350	1143266	1143521	256	1143446	23	3.57761	trChip_vs_input_peak_3420
scaffold_398	933454	933760	307	933645	23	3.57761	trChip_vs_input_peak_3854
scaffold_411	1038052	1038404	353	1038183	23	3.57761	trChip_vs_input_peak_4014
scaffold_45	3437854	3438251	398	3438062	23	3.57761	trChip_vs_input_peak_4316
scaffold_704	31561	32227	667	31739	23	3.57761	trChip_vs_input_peak_5774
scaffold_22	3107484	3107801	318	3107587	24	3.57459	trChip_vs_input_peak_1968
scaffold_38	819036	819275	240	819208	24	3.57459	trChip_vs_input_peak_3694
scaffold_409	910601	910873	273	910800	24	3.57459	trChip_vs_input_peak_3971
scaffold_48	1461321	1461763	443	1461591	24	3.57459	trChip_vs_input_peak_4513
scaffold_93	2357783	2358046	264	2357894	24	3.57459	trChip_vs_input_peak_6597
scaffold_20	2958865	2959193	329	2959004	14	3.57424	trChip_vs_input_peak_1741
scaffold_257	710457	710701	245	710625	25	3.5718	trChip_vs_input_peak_2381
scaffold_333	1049788	1050056	269	1049873	25	3.5718	trChip_vs_input_peak_3246
scaffold_401	748542	749011	470	748905	25	3.5718	trChip_vs_input_peak_3925
scaffold_577	273726	273960	235	273810	25	3.5718	trChip_vs_input_peak_5073
scaffold_742	165728	165991	264	165854	25	3.5718	trChip_vs_input_peak_5920
scaffold_82	2558459	2558702	244	2558649	25	3.5718	trChip_vs_input_peak_6246
scaffold_837	97749	98060	312	97894	25	3.5718	trChip_vs_input_peak_6317
scaffold_118	504564	505366	803	504773	26	3.56923	trChip_vs_input_peak_505
scaffold_202	836162	837189	1028	836275	26	3.56923	trChip_vs_input_peak_1768

scaffold_3	2479265	2479574	310	2479403	26	3.56923	trChip_vs_input_peak_2880
scaffold_334	968848	969530	683	968948	26	3.56923	trChip_vs_input_peak_3258
scaffold_579	115216	115450	235	115334	26	3.56923	trChip_vs_input_peak_5074
scaffold_42	2511726	2511972	247	2511882	27	3.56685	trChip_vs_input_peak_4086
scaffold_627	529169	529473	305	529345	27	3.56685	trChip_vs_input_peak_5325
scaffold_2	7138389	7138645	257	7138571	28	3.56463	trChip_vs_input_peak_1725
scaffold_4	5028679	5029011	333	5028892	28	3.56463	trChip_vs_input_peak_3884
scaffold_52	1988535	1988815	281	1988643	28	3.56463	trChip_vs_input_peak_4789
scaffold_135	2028992	2029345	354	2029112	29	3.56256	trChip_vs_input_peak_847
scaffold_1379	15687	16192	506	15873	29	3.56256	trChip_vs_input_peak_877
scaffold_646	230080	230459	380	230248	29	3.56256	trChip_vs_input_peak_5419
scaffold_101	2082143	2082672	530	2082310	35	3.56113	trChip_vs_input_peak_93
scaffold_11	1684970	1685341	372	1685100	35	3.56113	trChip_vs_input_peak_324
scaffold_135	642512	642981	470	642791	35	3.56113	trChip_vs_input_peak_834
scaffold_1628	3708	4215	508	3954	35	3.56113	trChip_vs_input_peak_1261
scaffold_251	1583383	1584264	882	1583736	35	3.56113	trChip_vs_input_peak_2338
scaffold_27	1909049	1909388	340	1909259	35	3.56113	trChip_vs_input_peak_2527
scaffold_306	1085203	1085578	376	1085390	35	3.56113	trChip_vs_input_peak_2991
scaffold_377	1113140	1114088	949	1113857	35	3.56113	trChip_vs_input_peak_3678
scaffold_38	2284605	2285098	494	2284777	35	3.56113	trChip_vs_input_peak_3708
scaffold_484	68125	68864	740	68521	35	3.56113	trChip_vs_input_peak_4540
scaffold_596	674068	674448	381	674296	35	3.56113	trChip_vs_input_peak_5175
scaffold_8126	37934	38173	240	38125	35	3.56113	trChip_vs_input_peak_6216
scaffold_17	2511327	2511945	619	2511794	30	3.56063	trChip_vs_input_peak_1348
scaffold_10272	2799	3311	513	2998	22	3.55735	trChip_vs_input_peak_132
scaffold_11	3653950	3654320	371	3654114	22	3.55735	trChip_vs_input_peak_334
scaffold_126	2323990	2324389	400	2324199	22	3.55735	trChip_vs_input_peak_677
scaffold_161	18488	18722	235	18633	22	3.55735	trChip_vs_input_peak_1249
scaffold_173	1965215	1965810	596	1965610	22	3.55735	trChip_vs_input_peak_1397
scaffold_189	1631518	1631752	235	1631579	22	3.55735	trChip_vs_input_peak_1587
scaffold_225	1242900	1243201	302	1243049	22	3.55735	trChip_vs_input_peak_2046
scaffold_261	993593	993845	253	993684	22	3.55735	trChip_vs_input_peak_2428
scaffold_282	290549	290946	398	290794	22	3.55735	trChip_vs_input_peak_2701
scaffold_293	856891	857294	404	857066	22	3.55735	trChip_vs_input_peak_2818
scaffold_297	739618	739852	235	739674	22	3.55735	trChip_vs_input_peak_2849
scaffold_3	4141920	4142175	256	4142062	22	3.55735	trChip_vs_input_peak_2886
scaffold_303	949075	949367	293	949244	22	3.55735	trChip_vs_input_peak_2974
scaffold_325	938264	938594	331	938403	22	3.55735	trChip_vs_input_peak_3174
scaffold_333	1009880	1010119	240	1010008	22	3.55735	trChip_vs_input_peak_3245
scaffold_337	858860	859096	237	858963	22	3.55735	trChip_vs_input_peak_3283

scaffold_356	272	568	297	378	22	3.55735	trChip_vs_input_peak_3456
scaffold_374	527103	527434	332	527270	22	3.55735	trChip_vs_input_peak_3639
scaffold_384	329482	329764	283	329588	22	3.55735	trChip_vs_input_peak_3753
scaffold_398	932249	932878	630	932763	22	3.55735	trChip_vs_input_peak_3853
scaffold_41	1965334	1965587	254	1965404	22	3.55735	trChip_vs_input_peak_3977
scaffold_44	1991189	1991692	504	1991218	22	3.55735	trChip_vs_input_peak_4231
scaffold_54	1413207	1413578	372	1413505	22	3.55735	trChip_vs_input_peak_4880
scaffold_55	2644545	2645052	508	2644961	22	3.55735	trChip_vs_input_peak_4948
scaffold_57	2849588	2849865	278	2849698	22	3.55735	trChip_vs_input_peak_5052
scaffold_622	330444	330737	294	330567	22	3.55735	trChip_vs_input_peak_5316
scaffold_67	642668	642971	304	642778	22	3.55735	trChip_vs_input_peak_5540
scaffold_709	456108	456539	432	456360	22	3.55735	trChip_vs_input_peak_5793
scaffold_735	132133	132441	309	132407	22	3.55735	trChip_vs_input_peak_5890
scaffold_772	302291	302602	312	302452	22	3.55735	trChip_vs_input_peak_6055
scaffold_83	827430	827960	531	827766	22	3.55735	trChip_vs_input_peak_6289
scaffold_90	1475531	1475864	334	1475679	22	3.55735	trChip_vs_input_peak_6500
scaffold_919	190634	191006	373	190841	22	3.55735	trChip_vs_input_peak_6562
scaffold_921	85305	85936	632	85571	22	3.55735	trChip_vs_input_peak_6580
scaffold_941	811	1045	235	926	22	3.55735	trChip_vs_input_peak_6626
scaffold_863	209692	210203	512	209888	22	3.55718	trChip_vs_input_peak_6400
scaffold_416	52653	53076	424	53016	32	3.55712	trChip_vs_input_peak_4034
scaffold_18	5178086	5178453	368	5178276	33	3.55552	trChip_vs_input_peak_1512
scaffold_106	693620	693885	266	693815	20	3.55377	trChip_vs_input_peak_203
scaffold_31	519906	520470	565	520200	35	3.5526	trChip_vs_input_peak_3021
scaffold_7	5161590	5161850	261	5161715	17	3.55224	trChip_vs_input_peak_5744
scaffold_7	2695725	2696001	277	2695857	23	3.54742	trChip_vs_input_peak_5732
scaffold_146	49259	49754	496	49675	37	3.54596	trChip_vs_input_peak_995
scaffold_227	858555	858863	309	858694	37	3.54596	trChip_vs_input_peak_2067
scaffold_247	1078731	1079211	481	1078919	37	3.54596	trChip_vs_input_peak_2264
scaffold_486	418063	418440	378	418237	37	3.54596	trChip_vs_input_peak_4550
scaffold_515	591694	592009	316	591887	37	3.54596	trChip_vs_input_peak_4760
scaffold_88	732594	733090	497	732895	37	3.54596	trChip_vs_input_peak_6444
scaffold_37	3131169	3131492	324	3131434	17	3.54226	trChip_vs_input_peak_3601
scaffold_649	261011	261332	322	261180	52	3.54104	trChip_vs_input_peak_5434
scaffold_15	415325	415577	253	415433	15	3.53596	trChip_vs_input_peak_1052
scaffold_134	2055164	2055717	554	2055567	24	3.53469	trChip_vs_input_peak_823
scaffold_14	2734515	2734886	372	2734742	24	3.53469	trChip_vs_input_peak_909
scaffold_150	1857960	1858327	368	1858166	24	3.53469	trChip_vs_input_peak_1073
scaffold_16	4599718	4600298	581	4599949	24	3.53469	trChip_vs_input_peak_1236
scaffold_1693	52331	52607	277	52477	24	3.53469	trChip_vs_input_peak_1330

scaffold_177	1146218	1146621	404	1146451	24	3.53469	trChip_vs_input_peak_1456
scaffold_227	1631701	1631980	280	1631786	24	3.53469	trChip_vs_input_peak_2068
scaffold_241	919515	920106	592	919877	24	3.53469	trChip_vs_input_peak_2196
scaffold_25	160345	161103	759	160481	24	3.53469	trChip_vs_input_peak_2289
scaffold_262	687630	687893	264	687731	24	3.53469	trChip_vs_input_peak_2438
scaffold_278	989030	989368	339	989162	24	3.53469	trChip_vs_input_peak_2613
scaffold_332	1039109	1039396	288	1039294	24	3.53469	trChip_vs_input_peak_3238
scaffold_334	237437	238151	715	237651	24	3.53469	trChip_vs_input_peak_3253
scaffold_36	174837	175119	283	174922	24	3.53469	trChip_vs_input_peak_3481
scaffold_37	1312752	1313328	577	1313100	24	3.53469	trChip_vs_input_peak_3576
scaffold_407	33813	34282	470	34160	24	3.53469	trChip_vs_input_peak_3952
scaffold_410	872942	873413	472	873215	24	3.53469	trChip_vs_input_peak_3999
scaffold_599	619526	619771	246	619599	24	3.53469	trChip_vs_input_peak_5190
scaffold_617	606331	606658	328	606478	24	3.53469	trChip_vs_input_peak_5293
scaffold_643	211602	212361	760	211925	24	3.53469	trChip_vs_input_peak_5409
scaffold_676	331645	332002	358	331778	24	3.53469	trChip_vs_input_peak_5601
scaffold_76	2680294	2680583	290	2680467	24	3.53469	trChip_vs_input_peak_5997
scaffold_77	1116015	1116437	423	1116263	24	3.53469	trChip_vs_input_peak_6025
scaffold_806	173838	174096	259	173903	24	3.53469	trChip_vs_input_peak_6193
scaffold_218	1652255	1652524	270	1652431	39	3.53242	trChip_vs_input_peak_1926
scaffold_264	1350130	1350880	751	1350566	39	3.53242	trChip_vs_input_peak_2455
scaffold_310	309309	309925	617	309483	39	3.53242	trChip_vs_input_peak_3055
scaffold_480	883888	884249	362	884062	39	3.53242	trChip_vs_input_peak_4531
scaffold_431	266121	266355	235	266237	17	3.53234	trChip_vs_input_peak_4176
scaffold_37	2228008	2228276	269	2228213	16	3.52359	trChip_vs_input_peak_3597
scaffold_431	266429	266710	282	266632	17	3.52247	trChip_vs_input_peak_4177
scaffold_1179	114398	114997	600	114593	41	3.52025	trChip_vs_input_peak_501
scaffold_33	2903071	2903840	770	2903457	41	3.52025	trChip_vs_input_peak_3217
scaffold_1128	38848	39082	235	39056	9	3.51994	trChip_vs_input_peak_416
scaffold_11	3113357	3113972	616	3113799	26	3.51561	trChip_vs_input_peak_329
scaffold_1204	35827	36095	269	35895	26	3.51561	trChip_vs_input_peak_572
scaffold_155	585725	586104	380	585973	26	3.51561	trChip_vs_input_peak_1141
scaffold_165	627916	628227	312	628127	26	3.51561	trChip_vs_input_peak_1283
scaffold_180	330732	331125	394	330945	26	3.51561	trChip_vs_input_peak_1513
scaffold_20	3778170	3778433	264	3778290	26	3.51561	trChip_vs_input_peak_1744
scaffold_21	1183437	1183734	298	1183567	26	3.51561	trChip_vs_input_peak_1841
scaffold_241	1534355	1534863	509	1534604	26	3.51561	trChip_vs_input_peak_2201
scaffold_250	1052514	1052824	311	1052667	26	3.51561	trChip_vs_input_peak_2316
scaffold_253	871273	871511	239	871369	26	3.51561	trChip_vs_input_peak_2351
scaffold_260	872976	873299	324	873132	26	3.51561	trChip_vs_input_peak_2416

scaffold_291	1082021	1082255	235	1082166	26	3.51561	trChip_vs_input_peak_2809
scaffold_30	1671359	1671741	383	1671517	26	3.51561	trChip_vs_input_peak_2924
scaffold_30	2394205	2394453	249	2394262	26	3.51561	trChip_vs_input_peak_2943
scaffold_30	2659666	2660006	341	2659732	26	3.51561	trChip_vs_input_peak_2945
scaffold_30	4208200	4209029	830	4208419	26	3.51561	trChip_vs_input_peak_2953
scaffold_33	343679	343962	284	343848	26	3.51561	trChip_vs_input_peak_3211
scaffold_337	380679	380980	302	380872	26	3.51561	trChip_vs_input_peak_3276
scaffold_35	1594287	1594629	343	1594440	26	3.51561	trChip_vs_input_peak_3402
scaffold_38	3113396	3113955	560	3113426	26	3.51561	trChip_vs_input_peak_3719
scaffold_41	3783195	3783931	737	3783699	26	3.51561	trChip_vs_input_peak_3989
scaffold_429	989778	990182	405	989913	26	3.51561	trChip_vs_input_peak_4153
scaffold_44	442060	442323	264	442220	26	3.51561	trChip_vs_input_peak_4213
scaffold_46	405410	405668	259	405554	26	3.51561	trChip_vs_input_peak_4353
scaffold_475	749823	750653	831	750470	26	3.51561	trChip_vs_input_peak_4486
scaffold_511	311273	311775	503	311391	26	3.51561	trChip_vs_input_peak_4736
scaffold_54	556992	557333	342	557194	26	3.51561	trChip_vs_input_peak_4873
scaffold_6	2264871	2265120	250	2265062	26	3.51561	trChip_vs_input_peak_5197
scaffold_622	344663	344935	273	344802	26	3.51561	trChip_vs_input_peak_5318
scaffold_65	1390232	1390768	537	1390542	26	3.51561	trChip_vs_input_peak_5454
scaffold_670	392773	393139	367	392992	26	3.51561	trChip_vs_input_peak_5567
scaffold_75	57417	57660	244	57517	26	3.51561	trChip_vs_input_peak_5937
scaffold_76	2635225	2635894	670	2635679	26	3.51561	trChip_vs_input_peak_5992
scaffold_760	338181	338511	331	338303	26	3.51561	trChip_vs_input_peak_6005
scaffold_144	1282862	1283096	235	1282907	17	3.51266	trChip_vs_input_peak_969
scaffold_42	624931	625165	235	625014	17	3.51266	trChip_vs_input_peak_4069
scaffold_421	639233	639555	323	639460	43	3.50926	trChip_vs_input_peak_4096
scaffold_66	1744640	1745353	714	1744799	35	3.50326	trChip_vs_input_peak_5492
scaffold_389	926589	927025	437	926769	33	3.50324	trChip_vs_input_peak_3777
scaffold_534	188466	188801	336	188622	30	3.5032	trChip_vs_input_peak_4852
scaffold_165	2038963	2039356	394	2039180	29	3.50319	trChip_vs_input_peak_1291
scaffold_22	1988057	1988517	461	1988406	29	3.50319	trChip_vs_input_peak_1947
scaffold_60	1694137	1694427	291	1694274	28	3.50318	trChip_vs_input_peak_5227
scaffold_30	1541789	1542361	573	1542134	27	3.50316	trChip_vs_input_peak_2920
scaffold_41	3072480	3072722	243	3072656	27	3.50316	trChip_vs_input_peak_3986
scaffold_463	736999	737268	270	737071	27	3.50316	trChip_vs_input_peak_4381
scaffold_607	27095	27499	405	27288	26	3.50314	trChip_vs_input_peak_5253
scaffold_94	1159290	1159580	291	1159463	26	3.50314	trChip_vs_input_peak_6621
scaffold_1089	45780	46078	299	45908	25	3.50313	trChip_vs_input_peak_285
scaffold_336	163632	163874	243	163792	25	3.50313	trChip_vs_input_peak_3267
scaffold_352	169604	169878	275	169733	25	3.50313	trChip_vs_input_peak_3426

scaffold_142	974948	975314	367	975164	24	3.50311	trChip_vs_input_peak_937
scaffold_218	55467	55755	289	55537	24	3.50311	trChip_vs_input_peak_1912
scaffold_223	1244671	1245079	409	1244910	24	3.50311	trChip_vs_input_peak_2026
scaffold_90	2349462	2349756	295	2349574	24	3.50311	trChip_vs_input_peak_6509
scaffold_179	615121	615544	424	615197	23	3.50309	trChip_vs_input_peak_1486
scaffold_18	597586	597824	239	597766	23	3.50309	trChip_vs_input_peak_1499
scaffold_216	959533	959809	277	959728	23	3.50309	trChip_vs_input_peak_1896
scaffold_246	478650	479048	399	478936	23	3.50309	trChip_vs_input_peak_2249
scaffold_31	3604757	3604997	241	3604870	23	3.50309	trChip_vs_input_peak_3047
scaffold_45	2734862	2735297	436	2734978	23	3.50309	trChip_vs_input_peak_4313
scaffold_586	505377	505725	349	505538	23	3.50309	trChip_vs_input_peak_5131
scaffold_101	1429288	1429550	263	1429389	22	3.50306	trChip_vs_input_peak_90
scaffold_130	15612	16125	514	15698	22	3.50306	trChip_vs_input_peak_740
scaffold_152	11365	11636	272	11553	22	3.50306	trChip_vs_input_peak_1095
scaffold_166	75784	76240	457	75850	22	3.50306	trChip_vs_input_peak_1296
scaffold_363	967453	967881	429	967739	22	3.50306	trChip_vs_input_peak_3514
scaffold_38	486106	486340	235	486157	22	3.50306	trChip_vs_input_peak_3689
scaffold_640	538216	538451	236	538304	22	3.50306	trChip_vs_input_peak_5404
scaffold_796	147064	147356	293	147164	22	3.50306	trChip_vs_input_peak_6144
scaffold_152	161214	161549	336	161345	21	3.50304	trChip_vs_input_peak_1096
scaffold_2	4085971	4086323	353	4086051	21	3.50304	trChip_vs_input_peak_1706
scaffold_363	440678	441116	439	441033	21	3.50304	trChip_vs_input_peak_3509
scaffold_436	950938	951373	436	951060	21	3.50304	trChip_vs_input_peak_4196
scaffold_90	2241212	2241449	238	2241272	21	3.50304	trChip_vs_input_peak_6508
scaffold_954	203187	203421	235	203350	21	3.50304	trChip_vs_input_peak_6652
scaffold_103	429831	430068	238	429874	20	3.50301	trChip_vs_input_peak_136
scaffold_13	211411	211664	254	211447	20	3.50301	trChip_vs_input_peak_727
scaffold_150	1301886	1302120	235	1301938	20	3.50301	trChip_vs_input_peak_1069
scaffold_110	1641375	1641638	264	1641482	19	3.50298	trChip_vs_input_peak_361
scaffold_19	3075818	3076070	253	3075917	19	3.50298	trChip_vs_input_peak_1604
scaffold_369	304204	304650	447	304545	19	3.50298	trChip_vs_input_peak_3562
scaffold_375	463179	463598	420	463386	19	3.50298	trChip_vs_input_peak_3648
scaffold_400	432950	433365	416	433172	19	3.50298	trChip_vs_input_peak_3913
scaffold_43	160693	160954	262	160828	19	3.50298	trChip_vs_input_peak_4156
scaffold_53	1027884	1028255	372	1028039	19	3.50298	trChip_vs_input_peak_4830
scaffold_67	1100845	1101200	356	1101118	19	3.50298	trChip_vs_input_peak_5545
scaffold_68	2550436	2550821	386	2550501	19	3.50298	trChip_vs_input_peak_5625
scaffold_69	902526	903009	484	902631	19	3.50298	trChip_vs_input_peak_5664
scaffold_7	2373978	2374212	235	2374161	19	3.50298	trChip_vs_input_peak_5726
scaffold_785	69565	70077	513	69739	19	3.50298	trChip_vs_input_peak_6098

scaffold_908	250224	250496	273	250379	19	3.50298	trChip_vs_input_peak_6531
scaffold_115	1154013	1154315	303	1154234	18	3.50295	trChip_vs_input_peak_465
scaffold_130	2069176	2069528	353	2069474	18	3.50295	trChip_vs_input_peak_757
scaffold_159	1557807	1558091	285	1557933	18	3.50295	trChip_vs_input_peak_1207
scaffold_206	376468	376741	274	376660	18	3.50295	trChip_vs_input_peak_1799
scaffold_22	4066023	4066283	261	4066168	18	3.50295	trChip_vs_input_peak_1978
scaffold_379	76222	76456	235	76393	18	3.50295	trChip_vs_input_peak_3682
scaffold_907	226485	226805	321	226709	18	3.50295	trChip_vs_input_peak_6524
scaffold_261	939434	939692	259	939469	17	3.50291	trChip_vs_input_peak_2425
scaffold_444	60323	60713	391	60370	17	3.50291	trChip_vs_input_peak_4256
scaffold_46	2494623	2494864	242	2494638	17	3.50291	trChip_vs_input_peak_4358
scaffold_16	4373235	4373564	330	4373445	16	3.50287	trChip_vs_input_peak_1232
scaffold_169	613870	614104	235	613998	16	3.50287	trChip_vs_input_peak_1324
scaffold_455	785137	785585	449	785241	16	3.50287	trChip_vs_input_peak_4334
scaffold_506	229282	229753	472	229649	16	3.50287	trChip_vs_input_peak_4710
scaffold_565	736026	736260	235	736136	16	3.50287	trChip_vs_input_peak_5028
scaffold_69	983952	984208	257	983989	16	3.50287	trChip_vs_input_peak_5666
scaffold_116	1406161	1406398	238	1406322	15	3.50282	trChip_vs_input_peak_473
scaffold_338	53012	53383	372	53115	15	3.50282	trChip_vs_input_peak_3285
scaffold_516	535289	535539	251	535484	15	3.50282	trChip_vs_input_peak_4770
scaffold_158	1048768	1049149	382	1049077	14	3.50277	trChip_vs_input_peak_1184
scaffold_28	988965	989277	313	989139	14	3.50277	trChip_vs_input_peak_2644
scaffold_128	1613287	1613554	268	1613356	13	3.50271	trChip_vs_input_peak_702
scaffold_37	1851576	1851821	246	1851766	13	3.50271	trChip_vs_input_peak_3584
scaffold_661	318517	318895	379	318634	13	3.50271	trChip_vs_input_peak_5511
scaffold_95	464833	465067	235	464858	13	3.50271	trChip_vs_input_peak_6632
scaffold_191	416297	416601	305	416548	12	3.50264	trChip_vs_input_peak_1616
scaffold_735	341213	341460	248	341250	12	3.50264	trChip_vs_input_peak_5892
scaffold_51	48269	48583	315	48438	11	3.50256	trChip_vs_input_peak_4725
scaffold_910	154413	154669	257	154475	11	3.50256	trChip_vs_input_peak_6548
scaffold_286	1242555	1242789	235	1242616	11	3.49946	trChip_vs_input_peak_2746
scaffold_669	45432	45742	311	45644	11	3.49946	trChip_vs_input_peak_5533
scaffold_67	1554729	1554963	235	1554818	11	3.49946	trChip_vs_input_peak_5550
scaffold_8	4406785	4407105	321	4407009	11	3.49946	trChip_vs_input_peak_6164
scaffold_892	201782	202038	257	201961	11	3.49946	trChip_vs_input_peak_6483
scaffold_893	287430	287667	238	287575	11	3.49946	trChip_vs_input_peak_6488
scaffold_1	1266703	1266957	255	1266768	28	3.49933	trChip_vs_input_peak_7
scaffold_11	602001	602719	719	602399	28	3.49933	trChip_vs_input_peak_318
scaffold_111	673229	673874	646	673772	28	3.49933	trChip_vs_input_peak_377
scaffold_1137	48635	49056	422	48687	28	3.49933	trChip_vs_input_peak_439

scaffold_172	1436185	1436440	256	1436278	28	3.49933	trChip_vs_input_peak_1381
scaffold_188	1916313	1916622	310	1916398	28	3.49933	trChip_vs_input_peak_1578
scaffold_202	722720	723158	439	722966	28	3.49933	trChip_vs_input_peak_1765
scaffold_227	1635545	1635828	284	1635671	28	3.49933	trChip_vs_input_peak_2069
scaffold_316	487228	487735	508	487353	28	3.49933	trChip_vs_input_peak_3100
scaffold_38	2061812	2062132	321	2061964	28	3.49933	trChip_vs_input_peak_3706
scaffold_4	4404964	4405257	294	4405073	28	3.49933	trChip_vs_input_peak_3878
scaffold_509	79330	79685	356	79505	28	3.49933	trChip_vs_input_peak_4722
scaffold_522	328229	328944	716	328751	28	3.49933	trChip_vs_input_peak_4800
scaffold_587	202748	203038	291	202968	28	3.49933	trChip_vs_input_peak_5138
scaffold_5888	538	1062	525	881	28	3.49933	trChip_vs_input_peak_5144
scaffold_605	514612	514880	269	514715	28	3.49933	trChip_vs_input_peak_5248
scaffold_648	302391	302807	417	302502	28	3.49933	trChip_vs_input_peak_5426
scaffold_670	388044	388363	320	388178	28	3.49933	trChip_vs_input_peak_5566
scaffold_671	437748	438202	455	437902	28	3.49933	trChip_vs_input_peak_5581
scaffold_841	146064	146541	478	146379	28	3.49933	trChip_vs_input_peak_6334
scaffold_88	609729	610412	684	610000	28	3.49933	trChip_vs_input_peak_6443
scaffold_6	6028851	6029144	294	6029015	18	3.49375	trChip_vs_input_peak_5214
scaffold_313	1029635	1029963	329	1029771	12	3.48922	trChip_vs_input_peak_3080
scaffold_106	2504657	2504991	335	2504870	30	3.48527	trChip_vs_input_peak_216
scaffold_11	5398029	5398263	235	5398178	30	3.48527	trChip_vs_input_peak_350
scaffold_1117	17815	18214	400	17928	30	3.48527	trChip_vs_input_peak_394
scaffold_130	1226230	1226638	409	1226435	30	3.48527	trChip_vs_input_peak_747
scaffold_148	1643650	1644080	431	1643870	30	3.48527	trChip_vs_input_peak_1029
scaffold_21	2773230	2773589	360	2773446	30	3.48527	trChip_vs_input_peak_1847
scaffold_255	978235	978620	386	978397	30	3.48527	trChip_vs_input_peak_2360
scaffold_267	1508242	1508671	430	1508505	30	3.48527	trChip_vs_input_peak_2489
scaffold_28	3292328	3292636	309	3292446	30	3.48527	trChip_vs_input_peak_2658
scaffold_280	179293	180099	807	179461	30	3.48527	trChip_vs_input_peak_2669
scaffold_285	921869	922598	730	922071	30	3.48527	trChip_vs_input_peak_2735
scaffold_361	855923	856330	408	856055	30	3.48527	trChip_vs_input_peak_3502
scaffold_389	794326	794775	450	794708	30	3.48527	trChip_vs_input_peak_3773
scaffold_4	2213774	2214155	382	2213927	30	3.48527	trChip_vs_input_peak_3871
scaffold_408	104072	104586	515	104366	30	3.48527	trChip_vs_input_peak_3960
scaffold_42	1153571	1154244	674	1154016	30	3.48527	trChip_vs_input_peak_4075
scaffold_656	134477	134954	478	134602	30	3.48527	trChip_vs_input_peak_5478
scaffold_69	1160893	1161202	310	1161027	30	3.48527	trChip_vs_input_peak_5671
scaffold_792	277858	278266	409	278047	30	3.48527	trChip_vs_input_peak_6133
scaffold_810	46253	47004	752	46754	30	3.48527	trChip_vs_input_peak_6215
scaffold_59	3159196	3159481	286	3159387	17	3.48356	trChip_vs_input_peak_5160

scaffold_105	707317	707605	289	707412	32	3.473	trChip_vs_input_peak_167
scaffold_1083	114035	114820	786	114643	32	3.473	trChip_vs_input_peak_277
scaffold_134	581136	581557	422	581327	32	3.473	trChip_vs_input_peak_809
scaffold_145	305265	305788	524	305434	32	3.473	trChip_vs_input_peak_976
scaffold_147	1959497	1959999	503	1959536	32	3.473	trChip_vs_input_peak_1021
scaffold_160	1698414	1699221	808	1698503	32	3.473	trChip_vs_input_peak_1244
scaffold_180	954615	954941	327	954724	32	3.473	trChip_vs_input_peak_1516
scaffold_235	143834	144704	871	144557	32	3.473	trChip_vs_input_peak_2146
scaffold_248	1478135	1478460	326	1478298	32	3.473	trChip_vs_input_peak_2283
scaffold_251	996788	997158	371	997010	32	3.473	trChip_vs_input_peak_2330
scaffold_251	1633781	1634126	346	1633979	32	3.473	trChip_vs_input_peak_2340
scaffold_27	2213649	2214311	663	2214037	32	3.473	trChip_vs_input_peak_2531
scaffold_4296	7725	8058	334	7849	32	3.473	trChip_vs_input_peak_4155
scaffold_447	871314	872497	1184	872279	32	3.473	trChip_vs_input_peak_4275
scaffold_470	710852	711329	478	711198	32	3.473	trChip_vs_input_peak_4431
scaffold_113	1759473	1759965	493	1759761	15	3.47029	trChip_vs_input_peak_430
scaffold_1016	229614	229848	235	229816	13	3.46845	trChip_vs_input_peak_111
scaffold_123	1236003	1236255	253	1236112	13	3.46845	trChip_vs_input_peak_621
scaffold_180	1722810	1723120	311	1722917	13	3.46845	trChip_vs_input_peak_1521
scaffold_184	519630	519864	235	519695	13	3.46845	trChip_vs_input_peak_1543
scaffold_263	9484	9733	250	9588	13	3.46845	trChip_vs_input_peak_2444
scaffold_277	334395	334638	244	334546	13	3.46845	trChip_vs_input_peak_2596
scaffold_420	250676	250953	278	250766	13	3.46845	trChip_vs_input_peak_4094
scaffold_537	416404	416665	262	416466	13	3.46845	trChip_vs_input_peak_4866
scaffold_77	3001466	3001966	501	3001857	13	3.46845	trChip_vs_input_peak_6040
scaffold_83	201858	202165	308	201916	13	3.46845	trChip_vs_input_peak_6288
scaffold_953	104339	104626	288	104523	13	3.46845	trChip_vs_input_peak_6648
scaffold_245	1122430	1122701	272	1122598	17	3.46442	trChip_vs_input_peak_2239
scaffold_665	125333	125707	375	125544	17	3.46442	trChip_vs_input_peak_5520
scaffold_100	2082961	2083202	242	2083057	34	3.46221	trChip_vs_input_peak_76
scaffold_18	2430958	2431236	279	2431155	34	3.46221	trChip_vs_input_peak_1502
scaffold_25	2600128	2600383	256	2600219	34	3.46221	trChip_vs_input_peak_2299
scaffold_28	580104	580575	472	580277	34	3.46221	trChip_vs_input_peak_2642
scaffold_47	1723959	1724513	555	1724231	34	3.46221	trChip_vs_input_peak_4415
scaffold_60	1391001	1391403	403	1391222	34	3.46221	trChip_vs_input_peak_5223
scaffold_60	1693681	1694061	381	1693936	34	3.46221	trChip_vs_input_peak_5226
scaffold_68	1722779	1723207	429	1722963	34	3.46221	trChip_vs_input_peak_5617
scaffold_853	131087	131356	270	131266	34	3.46221	trChip_vs_input_peak_6372
scaffold_870	305874	306155	282	306104	10	3.45536	trChip_vs_input_peak_6426
scaffold_103	602250	603113	864	602498	36	3.45265	trChip_vs_input_peak_139

scaffold_133	693719	694085	367	693890	36	3.45265	trChip_vs_input_peak_797
scaffold_264	1020020	1020593	574	1020475	36	3.45265	trChip_vs_input_peak_2453
scaffold_311	1289896	1290399	504	1290185	36	3.45265	trChip_vs_input_peak_3074
scaffold_350	198930	199251	322	199050	36	3.45265	trChip_vs_input_peak_3417
scaffold_40	457147	457802	656	457604	36	3.45265	trChip_vs_input_peak_3895
scaffold_536	596177	596673	497	596400	36	3.45265	trChip_vs_input_peak_4863
scaffold_67	223842	224450	609	224032	36	3.45265	trChip_vs_input_peak_5539
scaffold_173	1767273	1767594	322	1767382	30	3.4476	trChip_vs_input_peak_1392
scaffold_618	57321	57585	265	57439	30	3.4476	trChip_vs_input_peak_5294
scaffold_536	66134	66456	323	66265	29	3.44577	trChip_vs_input_peak_4861
scaffold_752	9568	9804	237	9725	29	3.44577	trChip_vs_input_peak_5949
scaffold_1074	79084	79331	248	79131	15	3.44556	trChip_vs_input_peak_240
scaffold_1620	2898	3175	278	3011	15	3.44556	trChip_vs_input_peak_1258
scaffold_216	1627171	1627462	292	1627300	15	3.44556	trChip_vs_input_peak_1899
scaffold_37	1851906	1852520	615	1852100	15	3.44556	trChip_vs_input_peak_3585
scaffold_382	568767	569073	307	568894	15	3.44556	trChip_vs_input_peak_3742
scaffold_392	66384	66630	247	66546	15	3.44556	trChip_vs_input_peak_3805
scaffold_393	8765	9118	354	8912	15	3.44556	trChip_vs_input_peak_3809
scaffold_409	587927	588171	245	588012	15	3.44556	trChip_vs_input_peak_3968
scaffold_43	1502960	1503327	368	1503050	15	3.44556	trChip_vs_input_peak_4161
scaffold_450	691053	691287	235	691267	15	3.44556	trChip_vs_input_peak_4319
scaffold_50	1911015	1911396	382	1911308	15	3.44556	trChip_vs_input_peak_4662
scaffold_515	604315	604567	253	604477	15	3.44556	trChip_vs_input_peak_4761
scaffold_604	355568	355854	287	355716	15	3.44556	trChip_vs_input_peak_5244
scaffold_64	1394592	1394889	298	1394746	15	3.44556	trChip_vs_input_peak_5389
scaffold_7058	221	524	304	306	15	3.44556	trChip_vs_input_peak_5780
scaffold_723	247511	247873	363	247571	15	3.44556	trChip_vs_input_peak_5853
scaffold_76	424016	424376	361	424323	15	3.44556	trChip_vs_input_peak_5961
scaffold_914	202233	202478	246	202443	15	3.44556	trChip_vs_input_peak_6556
scaffold_243	1131005	1131409	405	1131096	14	3.44536	trChip_vs_input_peak_2215
scaffold_10	3686512	3686984	473	3686694	38	3.44411	trChip_vs_input_peak_59
scaffold_1229	109133	109439	307	109338	38	3.44411	trChip_vs_input_peak_617
scaffold_278	475655	476199	545	476019	38	3.44411	trChip_vs_input_peak_2610
scaffold_29	4047535	4047884	350	4047655	38	3.44411	trChip_vs_input_peak_2797
scaffold_365	1106563	1107570	1008	1107052	38	3.44411	trChip_vs_input_peak_3525
scaffold_125	324615	324857	243	324734	28	3.44381	trChip_vs_input_peak_650
scaffold_177	1135641	1135889	249	1135715	28	3.44381	trChip_vs_input_peak_1455
scaffold_212	68554	68850	297	68639	26	3.43946	trChip_vs_input_peak_1874
scaffold_525	93711	94023	313	93884	26	3.43946	trChip_vs_input_peak_4807
scaffold_552	381821	382081	261	382000	26	3.43946	trChip_vs_input_peak_4958

scaffold_82	2057349	2057593	245	2057522	26	3.43946	trChip_vs_input_peak_6242
scaffold_820	59141	59456	316	59263	26	3.43946	trChip_vs_input_peak_6252
scaffold_110	2470521	2471068	548	2470597	25	3.43704	trChip_vs_input_peak_367
scaffold_202	208258	208646	389	208446	25	3.43704	trChip_vs_input_peak_1754
scaffold_251	1167080	1167443	364	1167292	25	3.43704	trChip_vs_input_peak_2331
scaffold_258	922577	923295	719	923095	25	3.43704	trChip_vs_input_peak_2391
scaffold_261	895835	896214	380	896100	25	3.43704	trChip_vs_input_peak_2420
scaffold_29	2208564	2208912	349	2208697	25	3.43704	trChip_vs_input_peak_2790
scaffold_501	827933	828253	321	828116	25	3.43704	trChip_vs_input_peak_4679
scaffold_56	3235257	3235654	398	3235477	25	3.43704	trChip_vs_input_peak_4983
scaffold_64	327709	328009	301	327926	25	3.43704	trChip_vs_input_peak_5377
scaffold_91	445725	445972	248	445806	25	3.43704	trChip_vs_input_peak_6536
scaffold_92	2736450	2736747	298	2736678	25	3.43704	trChip_vs_input_peak_6578
scaffold_173	1636536	1636790	255	1636586	24	3.43443	trChip_vs_input_peak_1391
scaffold_47	894377	894851	475	894552	24	3.43443	trChip_vs_input_peak_4406
scaffold_522	603133	603406	274	603279	24	3.43443	trChip_vs_input_peak_4802
scaffold_70	1691822	1692201	380	1691929	24	3.43443	trChip_vs_input_peak_5756
scaffold_76	2613522	2613905	384	2613742	24	3.43443	trChip_vs_input_peak_5982
scaffold_13	3160030	3160299	270	3160104	16	3.43222	trChip_vs_input_peak_736
scaffold_1170	83536	83900	365	83714	23	3.4316	trChip_vs_input_peak_492
scaffold_197	1321188	1321776	589	1321563	23	3.4316	trChip_vs_input_peak_1656
scaffold_2069	13447	13689	243	13571	23	3.4316	trChip_vs_input_peak_1806
scaffold_22	3868747	3869008	262	3868848	23	3.4316	trChip_vs_input_peak_1973
scaffold_410	205967	206230	264	206127	23	3.4316	trChip_vs_input_peak_3992
scaffold_503	781007	781271	265	781161	23	3.4316	trChip_vs_input_peak_4696
scaffold_476	824959	825502	544	825187	42	3.42951	trChip_vs_input_peak_4490
scaffold_92	2514858	2515503	646	2515269	42	3.42951	trChip_vs_input_peak_6575
scaffold_157	14516	14885	370	14711	22	3.42854	trChip_vs_input_peak_1176
scaffold_165	1870883	1871159	277	1870978	22	3.42854	trChip_vs_input_peak_1287
scaffold_256	1254950	1255184	235	1255046	22	3.42854	trChip_vs_input_peak_2375
scaffold_308	854368	854620	253	854422	22	3.42854	trChip_vs_input_peak_3004
scaffold_619	329009	329283	275	329059	22	3.42854	trChip_vs_input_peak_5301
scaffold_81	2020429	2020915	487	2020570	22	3.42854	trChip_vs_input_peak_6207
scaffold_8666	17201	17499	299	17287	22	3.42854	trChip_vs_input_peak_6411
scaffold_137	1134015	1134264	250	1134153	17	3.42796	trChip_vs_input_peak_864
scaffold_165	1947400	1947723	324	1947431	17	3.42796	trChip_vs_input_peak_1288
scaffold_27	2224856	2225090	235	2224917	17	3.42796	trChip_vs_input_peak_2532
scaffold_28	49478	49771	294	49503	17	3.42796	trChip_vs_input_peak_2638
scaffold_28	1874467	1874701	235	1874639	17	3.42796	trChip_vs_input_peak_2651
scaffold_309	344434	344793	360	344621	17	3.42796	trChip_vs_input_peak_3009

scaffold_37	1859177	1859615	439	1859251	17	3.42796	trChip_vs_input_peak_3588
scaffold_474	41326	41657	332	41357	17	3.42796	trChip_vs_input_peak_4450
scaffold_61	2109034	2109293	260	2109079	17	3.42796	trChip_vs_input_peak_5262
scaffold_674	238826	239229	404	239051	17	3.42796	trChip_vs_input_peak_5590
scaffold_692	236839	237082	244	236917	17	3.42796	trChip_vs_input_peak_5697
scaffold_82	2301131	2301429	299	2301196	17	3.42796	trChip_vs_input_peak_6243
scaffold_908	225886	226193	308	226096	17	3.42796	trChip_vs_input_peak_6528
scaffold_58	3077028	3077375	348	3077255	21	3.4252	trChip_vs_input_peak_5103
scaffold_121	786775	787070	296	786946	20	3.42156	trChip_vs_input_peak_576
scaffold_30	4161855	4162181	327	4162026	20	3.42156	trChip_vs_input_peak_2952
scaffold_42	273507	273755	249	273579	20	3.42156	trChip_vs_input_peak_4066
scaffold_511	310431	310806	376	310717	20	3.42156	trChip_vs_input_peak_4735
scaffold_562	705848	706312	465	706110	20	3.42156	trChip_vs_input_peak_5016
scaffold_58	2724	3074	351	3007	20	3.42156	trChip_vs_input_peak_5078
scaffold_666	321213	321461	249	321319	20	3.42156	trChip_vs_input_peak_5525
scaffold_78	2482355	2483024	670	2482396	20	3.42156	trChip_vs_input_peak_6076
scaffold_322	469514	470054	541	469821	19	3.41756	trChip_vs_input_peak_3153
scaffold_802	364009	364333	325	364201	19	3.41756	trChip_vs_input_peak_6187
scaffold_53	1055296	1055606	311	1055494	15	3.41741	trChip_vs_input_peak_4834
scaffold_113	705841	706091	251	705902	19	3.41401	trChip_vs_input_peak_423
scaffold_119	1366257	1366830	574	1366688	19	3.41401	trChip_vs_input_peak_520
scaffold_119	1917089	1917340	252	1917233	19	3.41401	trChip_vs_input_peak_523
scaffold_14	3273100	3273480	381	3273347	19	3.41401	trChip_vs_input_peak_913
scaffold_140	2318131	2318456	326	2318336	19	3.41401	trChip_vs_input_peak_929
scaffold_203	461918	462302	385	462087	19	3.41401	trChip_vs_input_peak_1778
scaffold_205	1770197	1770439	243	1770271	19	3.41401	trChip_vs_input_peak_1794
scaffold_227	792554	792838	285	792767	19	3.41401	trChip_vs_input_peak_2065
scaffold_23	3896962	3897268	307	3897000	19	3.41401	trChip_vs_input_peak_2103
scaffold_24	3646091	3646385	295	3646173	19	3.41401	trChip_vs_input_peak_2183
scaffold_279	416764	417024	261	416931	19	3.41401	trChip_vs_input_peak_2621
scaffold_306	316252	316848	597	316392	19	3.41401	trChip_vs_input_peak_2988
scaffold_356	23585	24021	437	23939	19	3.41401	trChip_vs_input_peak_3458
scaffold_369	169623	169857	235	169831	19	3.41401	trChip_vs_input_peak_3560
scaffold_37	1744148	1744444	297	1744374	19	3.41401	trChip_vs_input_peak_3580
scaffold_398	259321	259722	402	259539	19	3.41401	trChip_vs_input_peak_3846
scaffold_4	4466061	4466303	243	4466102	19	3.41401	trChip_vs_input_peak_3881
scaffold_475	543969	544215	247	544000	19	3.41401	trChip_vs_input_peak_4475
scaffold_475	666254	666852	599	666399	19	3.41401	trChip_vs_input_peak_4482
scaffold_520	480542	480834	293	480646	19	3.41401	trChip_vs_input_peak_4796
scaffold_53	2530922	2531248	327	2531087	19	3.41401	trChip_vs_input_peak_4840

scaffold_54	1383547	1383870	324	1383679	19	3.41401	trChip_vs_input_peak_4878
scaffold_565	673568	673853	286	673700	19	3.41401	trChip_vs_input_peak_5026
scaffold_582	373997	374324	328	374176	19	3.41401	trChip_vs_input_peak_5114
scaffold_602	499125	499476	352	499330	19	3.41401	trChip_vs_input_peak_5237
scaffold_798	204814	205298	485	205121	19	3.41401	trChip_vs_input_peak_6147
scaffold_830	49958	50192	235	50032	19	3.41401	trChip_vs_input_peak_6301
scaffold_154	400246	400516	271	400470	18	3.41314	trChip_vs_input_peak_1118
scaffold_204	14829	15087	259	14878	18	3.41314	trChip_vs_input_peak_1784
scaffold_38	1874323	1874657	335	1874479	18	3.41314	trChip_vs_input_peak_3703
scaffold_415	370233	370608	376	370408	18	3.41314	trChip_vs_input_peak_4032
scaffold_750	398689	398923	235	398878	18	3.41314	trChip_vs_input_peak_5947
scaffold_80	2194319	2194558	240	2194406	18	3.41314	trChip_vs_input_peak_6182
scaffold_9	2312196	2312452	257	2312261	18	3.41314	trChip_vs_input_peak_6494
scaffold_475	511384	511943	560	511593	19	3.40924	trChip_vs_input_peak_4474
scaffold_121	637207	637755	549	637320	17	3.40825	trChip_vs_input_peak_575
scaffold_35	2130244	2130491	248	2130349	17	3.40825	trChip_vs_input_peak_3407
scaffold_565	293096	293409	314	293183	17	3.40825	trChip_vs_input_peak_5025
scaffold_60	824137	824371	235	824194	17	3.40825	trChip_vs_input_peak_5219
scaffold_673	73212	73546	335	73419	17	3.40825	trChip_vs_input_peak_5585
scaffold_1130	6566	6983	418	6837	50	3.40742	trChip_vs_input_peak_435
scaffold_149	3350	3632	283	3501	33	3.40316	trChip_vs_input_peak_1036
scaffold_241	1138678	1139059	382	1138875	33	3.40316	trChip_vs_input_peak_2198
scaffold_197	1579026	1579295	270	1579204	16	3.40281	trChip_vs_input_peak_1657
scaffold_273	982605	982873	269	982733	16	3.40281	trChip_vs_input_peak_2574
scaffold_289	383558	383824	267	383775	16	3.40281	trChip_vs_input_peak_2762
scaffold_699	211286	211522	237	211353	16	3.40281	trChip_vs_input_peak_5714
scaffold_1113	19947	20343	397	20264	21	3.40268	trChip_vs_input_peak_388
scaffold_1160	106220	106718	499	106448	21	3.40268	trChip_vs_input_peak_477
scaffold_123	447542	447818	277	447657	21	3.40268	trChip_vs_input_peak_618
scaffold_160	4229	4526	298	4449	21	3.40268	trChip_vs_input_peak_1237
scaffold_19	5076767	5077098	332	5076952	21	3.40268	trChip_vs_input_peak_1610
scaffold_21	3653740	3654361	622	3654259	21	3.40268	trChip_vs_input_peak_1849
scaffold_211	764431	764733	303	764554	21	3.40268	trChip_vs_input_peak_1868
scaffold_271	411350	411817	468	411531	21	3.40268	trChip_vs_input_peak_2552
scaffold_281	1352580	1352952	373	1352894	21	3.40268	trChip_vs_input_peak_2698
scaffold_29	4127850	4128097	248	4127943	21	3.40268	trChip_vs_input_peak_2798
scaffold_295	22883	23148	266	22982	21	3.40268	trChip_vs_input_peak_2828
scaffold_303	1367809	1368079	271	1367889	21	3.40268	trChip_vs_input_peak_2978
scaffold_311	1132780	1133038	259	1132913	21	3.40268	trChip_vs_input_peak_3072
scaffold_319	333003	333875	873	333781	21	3.40268	trChip_vs_input_peak_3112

scaffold_320	529174	529485	312	529385	21	3.40268	trChip_vs_input_peak_3133
scaffold_383	105639	105889	251	105735	21	3.40268	trChip_vs_input_peak_3748
scaffold_39	2678029	2678309	281	2678232	21	3.40268	trChip_vs_input_peak_3793
scaffold_396	802252	802517	266	802324	21	3.40268	trChip_vs_input_peak_3831
scaffold_4	4507957	4508191	235	4508050	21	3.40268	trChip_vs_input_peak_3882
scaffold_491	142353	142609	257	142384	21	3.40268	trChip_vs_input_peak_4597
scaffold_5	402396	402702	307	402497	21	3.40268	trChip_vs_input_peak_4639
scaffold_6	4870840	4871125	286	4871032	21	3.40268	trChip_vs_input_peak_5208
scaffold_62	2210497	2210984	488	2210778	21	3.40268	trChip_vs_input_peak_5312
scaffold_67	1099539	1099898	360	1099831	21	3.40268	trChip_vs_input_peak_5543
scaffold_679	354986	355220	235	355054	21	3.40268	trChip_vs_input_peak_5607
scaffold_70	1692461	1692777	317	1692646	21	3.40268	trChip_vs_input_peak_5757
scaffold_71	3193383	3193626	244	3193568	21	3.40268	trChip_vs_input_peak_5804
scaffold_90	2218657	2218924	268	2218818	21	3.40268	trChip_vs_input_peak_6507
scaffold_131	1584579	1584839	261	1584607	15	3.3967	trChip_vs_input_peak_768
scaffold_197	218598	218847	250	218628	15	3.3967	trChip_vs_input_peak_1654
scaffold_237	111960	112194	235	111987	15	3.3967	trChip_vs_input_peak_2155
scaffold_25	1014452	1014783	332	1014630	15	3.3967	trChip_vs_input_peak_2292
scaffold_344	663432	663735	304	663547	30	3.39374	trChip_vs_input_peak_3362
scaffold_11	4995777	4996207	431	4996030	23	3.3933	trChip_vs_input_peak_342
scaffold_111	898672	898906	235	898814	23	3.3933	trChip_vs_input_peak_378
scaffold_14	2900210	2900462	253	2900427	23	3.3933	trChip_vs_input_peak_910
scaffold_145	739020	739324	305	739127	23	3.3933	trChip_vs_input_peak_984
scaffold_159	415824	416132	309	415988	23	3.3933	trChip_vs_input_peak_1199
scaffold_159	1777895	1778139	245	1778002	23	3.3933	trChip_vs_input_peak_1208
scaffold_160	187713	188140	428	187860	23	3.3933	trChip_vs_input_peak_1238
scaffold_168	706223	706466	244	706406	23	3.3933	trChip_vs_input_peak_1322
scaffold_174	916426	916833	408	916705	23	3.3933	trChip_vs_input_peak_1416
scaffold_2	6981499	6981774	276	6981638	23	3.3933	trChip_vs_input_peak_1722
scaffold_217	302552	302855	304	302758	23	3.3933	trChip_vs_input_peak_1901
scaffold_25	1012462	1012758	297	1012557	23	3.3933	trChip_vs_input_peak_2291
scaffold_257	58461	58927	467	58814	23	3.3933	trChip_vs_input_peak_2378
scaffold_281	1125808	1126082	275	1125912	23	3.3933	trChip_vs_input_peak_2691
scaffold_299	491536	491770	235	491627	23	3.3933	trChip_vs_input_peak_2861
scaffold_3	1333548	1333782	235	1333718	23	3.3933	trChip_vs_input_peak_2875
scaffold_34	1189535	1189939	405	1189574	23	3.3933	trChip_vs_input_peak_3316
scaffold_341	379859	380135	277	380030	23	3.3933	trChip_vs_input_peak_3343
scaffold_373	189890	190384	495	190045	23	3.3933	trChip_vs_input_peak_3631
scaffold_389	668403	668885	483	668616	23	3.3933	trChip_vs_input_peak_3771
scaffold_407	285910	286176	267	286065	23	3.3933	trChip_vs_input_peak_3953

scaffold_412	761030	761489	460	761110	23	3.3933	trChip_vs_input_peak_4016
scaffold_461	875134	875369	236	875229	23	3.3933	trChip_vs_input_peak_4374
scaffold_466	61908	62282	375	62104	23	3.3933	trChip_vs_input_peak_4386
scaffold_503	687225	687860	636	687631	23	3.3933	trChip_vs_input_peak_4692
scaffold_511	681960	682194	235	682022	23	3.3933	trChip_vs_input_peak_4738
scaffold_528	367435	367748	314	367604	23	3.3933	trChip_vs_input_peak_4812
scaffold_54	592699	592933	235	592758	23	3.3933	trChip_vs_input_peak_4876
scaffold_649	554251	554485	235	554354	23	3.3933	trChip_vs_input_peak_5443
scaffold_659	194818	195140	323	195034	23	3.3933	trChip_vs_input_peak_5490
scaffold_728	236899	237203	305	237005	23	3.3933	trChip_vs_input_peak_5865
scaffold_8	4995348	4995592	245	4995560	23	3.3933	trChip_vs_input_peak_6167
scaffold_82	2651734	2652089	356	2651828	23	3.3933	trChip_vs_input_peak_6249
scaffold_895	187335	187578	244	187499	23	3.3933	trChip_vs_input_peak_6490
scaffold_313	1339426	1339675	250	1339511	14	3.3898	trChip_vs_input_peak_3083
scaffold_155	1574566	1574835	270	1574735	28	3.38642	trChip_vs_input_peak_1154
scaffold_66	660012	660796	785	660220	28	3.38642	trChip_vs_input_peak_5491
scaffold_117	686640	686940	301	686725	25	3.3854	trChip_vs_input_peak_486
scaffold_1211	25825	26146	322	26044	25	3.3854	trChip_vs_input_peak_583
scaffold_1338	68511	68837	327	68669	25	3.3854	trChip_vs_input_peak_805
scaffold_154	1953186	1953507	322	1953358	25	3.3854	trChip_vs_input_peak_1135
scaffold_167	783915	784189	275	784018	25	3.3854	trChip_vs_input_peak_1307
scaffold_199	1545509	1545838	330	1545704	25	3.3854	trChip_vs_input_peak_1677
scaffold_20	2651542	2651948	407	2651750	25	3.3854	trChip_vs_input_peak_1740
scaffold_214	919117	919531	415	919264	25	3.3854	trChip_vs_input_peak_1886
scaffold_22	3394034	3394381	348	3394306	25	3.3854	trChip_vs_input_peak_1969
scaffold_220	1665323	1666020	698	1665805	25	3.3854	trChip_vs_input_peak_1995
scaffold_23	3896336	3896703	368	3896550	25	3.3854	trChip_vs_input_peak_2102
scaffold_252	165418	165895	478	165563	25	3.3854	trChip_vs_input_peak_2342
scaffold_271	1088623	1088885	263	1088815	25	3.3854	trChip_vs_input_peak_2555
scaffold_279	346695	347013	319	346872	25	3.3854	trChip_vs_input_peak_2620
scaffold_296	32622	32936	315	32837	25	3.3854	trChip_vs_input_peak_2838
scaffold_30	2335797	2336088	292	2335972	25	3.3854	trChip_vs_input_peak_2940
scaffold_30	2363573	2363807	235	2363713	25	3.3854	trChip_vs_input_peak_2942
scaffold_371	361330	361584	255	361470	25	3.3854	trChip_vs_input_peak_3614
scaffold_42	1605183	1605558	376	1605410	25	3.3854	trChip_vs_input_peak_4079
scaffold_445	565775	566024	250	565833	25	3.3854	trChip_vs_input_peak_4264
scaffold_463	195931	196185	255	195976	25	3.3854	trChip_vs_input_peak_4380
scaffold_474	426654	426888	235	426811	25	3.3854	trChip_vs_input_peak_4454
scaffold_49	3377582	3377830	249	3377690	25	3.3854	trChip_vs_input_peak_4593
scaffold_500	42568	42964	397	42789	25	3.3854	trChip_vs_input_peak_4668

scaffold_505	368681	369056	376	368734	25	3.3854	trChip_vs_input_peak_4702
scaffold_580	187515	187762	248	187660	25	3.3854	trChip_vs_input_peak_5105
scaffold_68	2922395	2922701	307	2922527	25	3.3854	trChip_vs_input_peak_5629
scaffold_7	355692	356224	533	355783	25	3.3854	trChip_vs_input_peak_5718
scaffold_814	67615	68027	413	67798	25	3.3854	trChip_vs_input_peak_6221
scaffold_84	565	799	235	703	25	3.3854	trChip_vs_input_peak_6321
scaffold_959	80325	81125	801	80911	25	3.3854	trChip_vs_input_peak_6661
scaffold_44	1790856	1791292	437	1791080	27	3.38238	trChip_vs_input_peak_4228
scaffold_180	1216478	1216821	344	1216798	13	3.38196	trChip_vs_input_peak_1520
scaffold_109	282310	282553	244	282427	27	3.37866	trChip_vs_input_peak_290
scaffold_1173	108684	109087	404	108873	27	3.37866	trChip_vs_input_peak_494
scaffold_126	2390196	2390616	421	2390386	27	3.37866	trChip_vs_input_peak_678
scaffold_154	302686	302959	274	302818	27	3.37866	trChip_vs_input_peak_1116
scaffold_174	1101433	1101729	297	1101508	27	3.37866	trChip_vs_input_peak_1418
scaffold_177	37808	38264	457	38155	27	3.37866	trChip_vs_input_peak_1453
scaffold_198	730513	730759	247	730570	27	3.37866	trChip_vs_input_peak_1668
scaffold_201	910744	911651	908	911427	27	3.37866	trChip_vs_input_peak_1749
scaffold_218	910613	911095	483	910893	27	3.37866	trChip_vs_input_peak_1920
scaffold_221	647494	647818	325	647595	27	3.37866	trChip_vs_input_peak_1999
scaffold_252	588183	588443	261	588376	27	3.37866	trChip_vs_input_peak_2346
scaffold_33	3549933	3550174	242	3550103	27	3.37866	trChip_vs_input_peak_3224
scaffold_34	3122718	3122965	248	3122803	27	3.37866	trChip_vs_input_peak_3325
scaffold_369	117577	118308	732	117799	27	3.37866	trChip_vs_input_peak_3559
scaffold_37	787691	787925	235	787903	27	3.37866	trChip_vs_input_peak_3571
scaffold_43	3215759	3216074	316	3215914	27	3.37866	trChip_vs_input_peak_4171
scaffold_442	666644	667027	384	666817	27	3.37866	trChip_vs_input_peak_4255
scaffold_51	692018	692314	297	692222	27	3.37866	trChip_vs_input_peak_4727
scaffold_541	452058	452344	287	452138	27	3.37866	trChip_vs_input_peak_4901
scaffold_55	327060	327435	376	327257	27	3.37866	trChip_vs_input_peak_4936
scaffold_55	598161	598395	235	598206	27	3.37866	trChip_vs_input_peak_4940
scaffold_785	68591	68931	341	68717	27	3.37866	trChip_vs_input_peak_6097
scaffold_827	299505	299822	318	299685	27	3.37866	trChip_vs_input_peak_6276
scaffold_850	294820	295238	419	295005	27	3.37866	trChip_vs_input_peak_6365
scaffold_864	177818	178062	245	177892	27	3.37866	trChip_vs_input_peak_6404
scaffold_1077	149172	149499	328	149337	26	3.37805	trChip_vs_input_peak_244
scaffold_473	231482	231878	397	231651	26	3.37805	trChip_vs_input_peak_4442
scaffold_409	353956	354223	268	354131	25	3.3734	trChip_vs_input_peak_3966
scaffold_480	188792	189189	398	188955	25	3.3734	trChip_vs_input_peak_4528
scaffold_813	179797	180219	423	180002	25	3.3734	trChip_vs_input_peak_6217
scaffold_3	1316426	1316660	235	1316569	12	3.37295	trChip_vs_input_peak_2874

scaffold_1073	29790	30193	404	30020	29	3.37284	trChip_vs_input_peak_238
scaffold_137	1870438	1870709	272	1870534	29	3.37284	trChip_vs_input_peak_866
scaffold_147	1879707	1879952	246	1879779	29	3.37284	trChip_vs_input_peak_1019
scaffold_156	1989456	1989956	501	1989741	29	3.37284	trChip_vs_input_peak_1172
scaffold_159	321391	321903	513	321791	29	3.37284	trChip_vs_input_peak_1197
scaffold_209	1691472	1691972	501	1691812	29	3.37284	trChip_vs_input_peak_1836
scaffold_218	396416	396763	348	396556	29	3.37284	trChip_vs_input_peak_1916
scaffold_22	4516535	4517012	478	4516806	29	3.37284	trChip_vs_input_peak_1979
scaffold_269	1472690	1473216	527	1472775	29	3.37284	trChip_vs_input_peak_2505
scaffold_34	891774	892069	296	891923	29	3.37284	trChip_vs_input_peak_3312
scaffold_38	2566704	2566968	265	2566807	29	3.37284	trChip_vs_input_peak_3711
scaffold_454	791247	791690	444	791464	29	3.37284	trChip_vs_input_peak_4331
scaffold_571	139402	139798	397	139587	29	3.37284	trChip_vs_input_peak_5056
scaffold_7	587373	587732	360	587518	29	3.37284	trChip_vs_input_peak_5720
scaffold_717	31122	31371	250	31198	29	3.37284	trChip_vs_input_peak_5815
scaffold_76	1041516	1041813	298	1041750	29	3.37284	trChip_vs_input_peak_5965
scaffold_822	316520	316755	236	316721	29	3.37284	trChip_vs_input_peak_6261
scaffold_85	1112175	1112553	379	1112279	29	3.37284	trChip_vs_input_peak_6349
scaffold_86	2682673	2683546	874	2683185	29	3.37284	trChip_vs_input_peak_6390
scaffold_86	3041350	3042300	951	3041997	29	3.37284	trChip_vs_input_peak_6392
scaffold_88	119066	119329	264	119239	29	3.37284	trChip_vs_input_peak_6440
scaffold_130	1551895	1552133	239	1551962	18	3.36995	trChip_vs_input_peak_753
scaffold_237	1173200	1173486	287	1173295	24	3.36839	trChip_vs_input_peak_2161
scaffold_742	60994	61228	235	61068	24	3.36839	trChip_vs_input_peak_5919
scaffold_791	290890	291181	292	290987	24	3.36839	trChip_vs_input_peak_6125
scaffold_148	219705	220451	747	219913	31	3.36776	trChip_vs_input_peak_1025
scaffold_174	455941	456258	318	456033	31	3.36776	trChip_vs_input_peak_1404
scaffold_174	631607	631890	284	631694	31	3.36776	trChip_vs_input_peak_1411
scaffold_376	681798	682108	311	681900	31	3.36776	trChip_vs_input_peak_3657
scaffold_411	672279	673654	1376	672424	31	3.36776	trChip_vs_input_peak_4010
scaffold_783	75151	75506	356	75299	31	3.36776	trChip_vs_input_peak_6093
scaffold_809	39184	39442	259	39262	31	3.36776	trChip_vs_input_peak_6201
scaffold_1148	108639	109178	540	108984	33	3.36329	trChip_vs_input_peak_459
scaffold_115	1154500	1155194	695	1154821	33	3.36329	trChip_vs_input_peak_466
scaffold_13	3726184	3726834	651	3726436	33	3.36329	trChip_vs_input_peak_739
scaffold_217	1029265	1029730	466	1029548	33	3.36329	trChip_vs_input_peak_1909
scaffold_270	22415	22690	276	22622	33	3.36329	trChip_vs_input_peak_2547
scaffold_279	1231980	1232338	359	1232128	33	3.36329	trChip_vs_input_peak_2630
scaffold_360	1012101	1012479	379	1012281	33	3.36329	trChip_vs_input_peak_3498
scaffold_382	1143559	1143885	327	1143714	33	3.36329	trChip_vs_input_peak_3745

scaffold_45	1911445	1911697	253	1911505	33	3.36329	trChip_vs_input_peak_4306
scaffold_539	98392	98852	461	98552	33	3.36329	trChip_vs_input_peak_4871
scaffold_615	455797	456035	239	455944	33	3.36329	trChip_vs_input_peak_5284
scaffold_67	2924701	2925291	591	2925131	33	3.36329	trChip_vs_input_peak_5559
scaffold_250	1640741	1641229	489	1641118	23	3.36298	trChip_vs_input_peak_2324
scaffold_10	5255267	5255697	431	5255489	35	3.35933	trChip_vs_input_peak_69
scaffold_11	1142350	1142665	316	1142473	35	3.35933	trChip_vs_input_peak_323
scaffold_2	3745	4029	285	3847	35	3.35933	trChip_vs_input_peak_1688
scaffold_207	374850	375337	488	375127	35	3.35933	trChip_vs_input_peak_1809
scaffold_4	30960	31358	399	31161	35	3.35933	trChip_vs_input_peak_3867
scaffold_214	1377979	1378397	419	1378176	34	3.3593	trChip_vs_input_peak_1889
scaffold_69	563129	563363	235	563178	14	3.35732	trChip_vs_input_peak_5658
scaffold_167	900129	900454	326	900274	22	3.35712	trChip_vs_input_peak_1308
scaffold_541	436734	437184	451	437027	22	3.35712	trChip_vs_input_peak_4900
scaffold_659	163993	164265	273	164098	22	3.35712	trChip_vs_input_peak_5489
scaffold_262	386002	386708	707	386219	37	3.3558	trChip_vs_input_peak_2434
scaffold_266	394126	394581	456	394300	37	3.3558	trChip_vs_input_peak_2471
scaffold_3	1165696	1165993	298	1165875	37	3.3558	trChip_vs_input_peak_2871
scaffold_359	717924	718258	335	718111	37	3.3558	trChip_vs_input_peak_3479
scaffold_691	57775	58069	295	57939	37	3.3558	trChip_vs_input_peak_5691
scaffold_414	813888	814170	283	814092	16	3.35489	trChip_vs_input_peak_4025
scaffold_5	460647	460881	235	460771	16	3.35489	trChip_vs_input_peak_4641
scaffold_12	3432317	3433101	785	3432872	39	3.35262	trChip_vs_input_peak_549
scaffold_148	201398	202706	1309	201775	39	3.35262	trChip_vs_input_peak_1024
scaffold_768	302357	302810	454	302511	39	3.35262	trChip_vs_input_peak_6018
scaffold_146	918490	918774	285	918620	32	3.35093	trChip_vs_input_peak_1001
scaffold_619	327575	327861	287	327755	32	3.35093	trChip_vs_input_peak_5300
scaffold_146	1132868	1133209	342	1133050	21	3.35075	trChip_vs_input_peak_1003
scaffold_149	1559255	1559632	378	1559347	21	3.35075	trChip_vs_input_peak_1045
scaffold_188	959954	960203	250	960104	21	3.35075	trChip_vs_input_peak_1570
scaffold_295	637075	637356	282	637230	21	3.35075	trChip_vs_input_peak_2834
scaffold_342	129200	129447	248	129249	21	3.35075	trChip_vs_input_peak_3351
scaffold_493	181651	182124	474	181696	21	3.35075	trChip_vs_input_peak_4606
scaffold_64	1311077	1311379	303	1311152	21	3.35075	trChip_vs_input_peak_5388
scaffold_76	1761459	1761858	400	1761574	21	3.35075	trChip_vs_input_peak_5967
scaffold_585	359793	360723	931	360196	41	3.34975	trChip_vs_input_peak_5123
scaffold_8	1199442	1199676	235	1199623	12	3.34815	trChip_vs_input_peak_6155
scaffold_866	102128	102362	235	102264	17	3.34498	trChip_vs_input_peak_6408
scaffold_281	39107	39521	415	39325	45	3.34477	trChip_vs_input_peak_2674
scaffold_484	387492	387775	284	387681	20	3.34381	trChip_vs_input_peak_4542

scaffold_515	575444	575699	256	575510	20	3.34381	trChip_vs_input_peak_4758
scaffold_58	2798699	2799138	440	2799024	20	3.34381	trChip_vs_input_peak_5101
scaffold_76	2616101	2616638	538	2616274	20	3.34381	trChip_vs_input_peak_5984
scaffold_272	581377	582044	668	581828	29	3.33639	trChip_vs_input_peak_2561
scaffold_4	4405865	4406212	348	4406136	21	3.33625	trChip_vs_input_peak_3879
scaffold_100	191440	191848	409	191820	19	3.3362	trChip_vs_input_peak_70
scaffold_18	1960564	1960799	236	1960604	19	3.3362	trChip_vs_input_peak_1501
scaffold_261	310458	310748	291	310606	19	3.3362	trChip_vs_input_peak_2418
scaffold_29	3617619	3617924	306	3617812	19	3.3362	trChip_vs_input_peak_2793
scaffold_48	2016929	2017230	302	2017012	19	3.3362	trChip_vs_input_peak_4519
scaffold_59	49950	50212	263	49983	19	3.3362	trChip_vs_input_peak_5149
scaffold_837	231181	231772	592	231596	19	3.3362	trChip_vs_input_peak_6319
scaffold_88	879298	879605	308	879483	19	3.3362	trChip_vs_input_peak_6447
scaffold_400	449908	450265	358	450137	13	3.33595	trChip_vs_input_peak_3916
scaffold_344	584947	585250	304	585017	28	3.33091	trChip_vs_input_peak_3360
scaffold_361	107545	107825	281	107703	28	3.33091	trChip_vs_input_peak_3500
scaffold_566	266271	266505	235	266418	18	3.32783	trChip_vs_input_peak_5030
scaffold_567	565858	566096	239	566027	18	3.32783	trChip_vs_input_peak_5035
scaffold_567	567007	567783	777	567735	18	3.32783	trChip_vs_input_peak_5037
scaffold_76	2641409	2641918	510	2641575	18	3.32783	trChip_vs_input_peak_5996
scaffold_860	159642	159939	298	159806	18	3.32783	trChip_vs_input_peak_6393
scaffold_49	548870	549188	319	548966	17	3.32734	trChip_vs_input_peak_4569
scaffold_223	1244218	1244508	291	1244314	27	3.32506	trChip_vs_input_peak_2025
scaffold_702	278462	278701	240	278618	27	3.32506	trChip_vs_input_peak_5770
scaffold_305	927323	927706	384	927625	26	3.31879	trChip_vs_input_peak_2985
scaffold_17	596581	596878	298	596761	17	3.31858	trChip_vs_input_peak_1337
scaffold_253	1418754	1419057	304	1418962	17	3.31858	trChip_vs_input_peak_2353
scaffold_265	524421	524655	235	524497	17	3.31858	trChip_vs_input_peak_2463
scaffold_290	1028554	1029075	522	1028900	17	3.31858	trChip_vs_input_peak_2804
scaffold_293	856417	856670	254	856593	17	3.31858	trChip_vs_input_peak_2817
scaffold_320	232160	232433	274	232330	17	3.31858	trChip_vs_input_peak_3131
scaffold_37	2986863	2987100	238	2986925	17	3.31858	trChip_vs_input_peak_3600
scaffold_4	6276529	6276763	235	6276635	17	3.31858	trChip_vs_input_peak_3890
scaffold_489	816911	817145	235	816972	17	3.31858	trChip_vs_input_peak_4565
scaffold_74	2668115	2668372	258	2668308	17	3.31858	trChip_vs_input_peak_5913
scaffold_632	157739	158047	309	157902	16	3.31752	trChip_vs_input_peak_5356
scaffold_129	977428	977664	237	977661	14	3.31497	trChip_vs_input_peak_712
scaffold_105	1676622	1676876	255	1676840	13	3.31342	trChip_vs_input_peak_170
scaffold_130	662368	662731	364	662554	25	3.31207	trChip_vs_input_peak_743
scaffold_173	741674	741933	260	741728	25	3.31207	trChip_vs_input_peak_1387

scaffold_318	280710	281279	570	280886	25	3.31207	trChip_vs_input_peak_3109
scaffold_35	3641561	3641862	302	3641716	25	3.31207	trChip_vs_input_peak_3415
scaffold_37	2036117	2036475	359	2036290	25	3.31207	trChip_vs_input_peak_3592
scaffold_42	3815913	3816214	302	3816057	25	3.31207	trChip_vs_input_peak_4091
scaffold_37	2219640	2219915	276	2219826	16	3.3083	trChip_vs_input_peak_3596
scaffold_485	728544	728811	268	728654	16	3.3083	trChip_vs_input_peak_4546
scaffold_96	163105	163357	253	163272	16	3.3083	trChip_vs_input_peak_6664
scaffold_223	491816	492207	392	492161	24	3.30484	trChip_vs_input_peak_2023
scaffold_356	147759	148116	358	147936	24	3.30484	trChip_vs_input_peak_3462
scaffold_39	445996	446271	276	446115	24	3.30484	trChip_vs_input_peak_3783
scaffold_69	2299078	2299380	303	2299175	24	3.30484	trChip_vs_input_peak_5679
scaffold_41	2037966	2038217	252	2038182	23	3.29705	trChip_vs_input_peak_3979
scaffold_41	2536783	2537333	551	2537239	23	3.29705	trChip_vs_input_peak_3983
scaffold_463	839115	839510	396	839288	23	3.29705	trChip_vs_input_peak_4382
scaffold_782	169164	169431	268	169313	23	3.29705	trChip_vs_input_peak_6089
scaffold_26	202930	203170	241	203110	15	3.29682	trChip_vs_input_peak_2396
scaffold_39	2265182	2265572	391	2265273	17	3.29259	trChip_vs_input_peak_3792
scaffold_171	572796	573042	247	572894	22	3.28862	trChip_vs_input_peak_1369
scaffold_19	4376922	4377204	283	4377113	22	3.28862	trChip_vs_input_peak_1608
scaffold_256	334026	334563	538	334515	22	3.28862	trChip_vs_input_peak_2366
scaffold_383	1113054	1113288	235	1113218	22	3.28862	trChip_vs_input_peak_3751
scaffold_423	747435	747695	261	747633	22	3.28862	trChip_vs_input_peak_4105
scaffold_439	359763	360030	268	359906	22	3.28862	trChip_vs_input_peak_4204
scaffold_264	1452917	1453275	359	1453055	15	3.28715	trChip_vs_input_peak_2459
scaffold_434	248569	248833	265	248719	14	3.2839	trChip_vs_input_peak_4185
scaffold_458	670650	670884	235	670743	14	3.2839	trChip_vs_input_peak_4343
scaffold_8666	17569	17803	235	17772	14	3.2839	trChip_vs_input_peak_6412
scaffold_116	663222	663546	325	663369	21	3.27947	trChip_vs_input_peak_471
scaffold_163	1519855	1520240	386	1520087	21	3.27947	trChip_vs_input_peak_1272
scaffold_269	1208953	1209201	249	1208980	21	3.27947	trChip_vs_input_peak_2503
scaffold_411	27457	27715	259	27551	21	3.27947	trChip_vs_input_peak_4003
scaffold_118	1544444	1545407	964	1545221	28	3.27719	trChip_vs_input_peak_510
scaffold_49	1427970	1428370	401	1428150	28	3.27719	trChip_vs_input_peak_4571
scaffold_58	523662	524048	387	523848	14	3.27367	trChip_vs_input_peak_5088
scaffold_469	547441	547936	496	547664	46	3.27296	trChip_vs_input_peak_4395
scaffold_794	324796	325306	511	324969	46	3.27296	trChip_vs_input_peak_6140
scaffold_155	1788335	1788645	311	1788548	42	3.27108	trChip_vs_input_peak_1157
scaffold_108	649791	650316	526	650020	40	3.27	trChip_vs_input_peak_253
scaffold_85	1311299	1311554	256	1311450	27	3.26964	trChip_vs_input_peak_6350
scaffold_186	1105529	1105793	265	1105731	20	3.26951	trChip_vs_input_peak_1558

scaffold_656	87639	87896	258	87743	20	3.26951	trChip_vs_input_peak_5477
scaffold_73	2699161	2699481	321	2699392	20	3.26951	trChip_vs_input_peak_5882
scaffold_51	199991	200251	261	200124	13	3.26925	trChip_vs_input_peak_4726
scaffold_522	693164	693398	235	693306	13	3.26925	trChip_vs_input_peak_4803
scaffold_4443	1070	1513	444	1155	38	3.2688	trChip_vs_input_peak_4263
scaffold_69	1105808	1106114	307	1106022	38	3.2688	trChip_vs_input_peak_5670
scaffold_114	1680200	1680748	549	1680526	36	3.26749	trChip_vs_input_peak_445
scaffold_151	1623710	1624212	503	1623833	36	3.26749	trChip_vs_input_peak_1086
scaffold_33	946792	947167	376	946950	36	3.26749	trChip_vs_input_peak_3215
scaffold_558	353322	353681	360	353476	36	3.26749	trChip_vs_input_peak_4972
scaffold_579	233374	234195	822	233850	36	3.26749	trChip_vs_input_peak_5076
scaffold_411	518926	519160	235	518940	17	3.26701	trChip_vs_input_peak_4006
scaffold_144	167917	168359	443	168101	34	3.26602	trChip_vs_input_peak_963
scaffold_174	611654	611914	261	611743	34	3.26602	trChip_vs_input_peak_1410
scaffold_237	1029703	1029969	267	1029828	34	3.26602	trChip_vs_input_peak_2160
scaffold_299	820004	820530	527	820300	34	3.26602	trChip_vs_input_peak_2864
scaffold_444	734831	735278	448	735161	34	3.26602	trChip_vs_input_peak_4260
scaffold_465	8486	9136	651	8670	34	3.26602	trChip_vs_input_peak_4385
scaffold_547	400850	401257	408	401003	34	3.26602	trChip_vs_input_peak_4926
scaffold_750	248633	248880	248	248775	34	3.26602	trChip_vs_input_peak_5946
scaffold_1	6262952	6263379	428	6263165	32	3.26437	trChip_vs_input_peak_34
scaffold_101	2213774	2214123	350	2213955	32	3.26437	trChip_vs_input_peak_95
scaffold_20	1302141	1302523	383	1302341	32	3.26437	trChip_vs_input_peak_1731
scaffold_308	737061	737431	371	737287	32	3.26437	trChip_vs_input_peak_3001
scaffold_31	3322712	3323005	294	3322888	32	3.26437	trChip_vs_input_peak_3043
scaffold_339	344364	344712	349	344576	32	3.26437	trChip_vs_input_peak_3295
scaffold_36	2657123	2657461	339	2657288	32	3.26437	trChip_vs_input_peak_3490
scaffold_525	92920	93638	719	93556	32	3.26437	trChip_vs_input_peak_4806
scaffold_531	369936	370681	746	370073	32	3.26437	trChip_vs_input_peak_4845
scaffold_8	5599996	5600432	437	5600229	32	3.26437	trChip_vs_input_peak_6170
scaffold_852	283595	283866	272	283785	32	3.26437	trChip_vs_input_peak_6369
scaffold_1	5592459	5592717	259	5592594	30	3.26252	trChip_vs_input_peak_27
scaffold_1308	77561	77874	314	77721	30	3.26252	trChip_vs_input_peak_765
scaffold_179	944205	944445	241	944334	30	3.26252	trChip_vs_input_peak_1489
scaffold_188	903321	903599	279	903493	30	3.26252	trChip_vs_input_peak_1568
scaffold_20	693302	693549	248	693348	30	3.26252	trChip_vs_input_peak_1727
scaffold_264	1351221	1351967	747	1351367	30	3.26252	trChip_vs_input_peak_2456
scaffold_266	617231	617666	436	617389	30	3.26252	trChip_vs_input_peak_2475
scaffold_280	1404309	1404618	310	1404464	30	3.26252	trChip_vs_input_peak_2673
scaffold_30	1805183	1805479	297	1805363	30	3.26252	trChip_vs_input_peak_2928

scaffold_366	493735	494517	783	493919	30	3.26252	trChip_vs_input_peak_3530
scaffold_420	751885	752273	389	752039	30	3.26252	trChip_vs_input_peak_4095
scaffold_46	1543087	1544584	1498	1543343	30	3.26252	trChip_vs_input_peak_4357
scaffold_491	599991	600667	677	600220	30	3.26252	trChip_vs_input_peak_4600
scaffold_515	590057	590596	540	590423	30	3.26252	trChip_vs_input_peak_4759
scaffold_691	482390	482717	328	482505	30	3.26252	trChip_vs_input_peak_5693
scaffold_7	2961561	2962074	514	2961969	30	3.26252	trChip_vs_input_peak_5735
scaffold_781	271361	271860	500	271674	30	3.26252	trChip_vs_input_peak_6085
scaffold_905	118609	118971	363	118823	30	3.26252	trChip_vs_input_peak_6522
scaffold_110	435523	436034	512	435623	26	3.26158	trChip_vs_input_peak_357
scaffold_118	1543480	1543773	294	1543573	26	3.26158	trChip_vs_input_peak_508
scaffold_146	1386458	1386750	293	1386560	26	3.26158	trChip_vs_input_peak_1004
scaffold_46	204664	204951	288	204795	26	3.26158	trChip_vs_input_peak_4351
scaffold_89	1222520	1222954	435	1222678	26	3.26158	trChip_vs_input_peak_6474
scaffold_101	897486	898064	579	897704	28	3.26041	trChip_vs_input_peak_84
scaffold_12	1356900	1357185	286	1357080	28	3.26041	trChip_vs_input_peak_535
scaffold_137	454845	455426	582	455047	28	3.26041	trChip_vs_input_peak_862
scaffold_142	1492956	1493277	322	1493133	28	3.26041	trChip_vs_input_peak_944
scaffold_16	1687733	1688391	659	1688131	28	3.26041	trChip_vs_input_peak_1225
scaffold_174	17333	17603	271	17474	28	3.26041	trChip_vs_input_peak_1401
scaffold_177	94573	94959	387	94836	28	3.26041	trChip_vs_input_peak_1454
scaffold_187	793919	794195	277	794100	28	3.26041	trChip_vs_input_peak_1565
scaffold_206	1156753	1157010	258	1156857	28	3.26041	trChip_vs_input_peak_1801
scaffold_23	2841474	2841988	515	2841595	28	3.26041	trChip_vs_input_peak_2093
scaffold_25	1968935	1969290	356	1969195	28	3.26041	trChip_vs_input_peak_2297
scaffold_289	1270041	1270653	613	1270520	28	3.26041	trChip_vs_input_peak_2780
scaffold_3	4237116	4237549	434	4237295	28	3.26041	trChip_vs_input_peak_2887
scaffold_326	55085	55470	386	55343	28	3.26041	trChip_vs_input_peak_3182
scaffold_331	174232	174499	268	174321	28	3.26041	trChip_vs_input_peak_3232
scaffold_365	1105445	1105679	235	1105523	28	3.26041	trChip_vs_input_peak_3523
scaffold_411	149044	149285	242	149122	28	3.26041	trChip_vs_input_peak_4005
scaffold_45	1084922	1085523	602	1085181	28	3.26041	trChip_vs_input_peak_4300
scaffold_474	521286	521605	320	521379	28	3.26041	trChip_vs_input_peak_4463
scaffold_487	601874	602630	757	602433	28	3.26041	trChip_vs_input_peak_4554
scaffold_528	20666	21178	513	20849	28	3.26041	trChip_vs_input_peak_4810
scaffold_535	447996	448291	296	448184	28	3.26041	trChip_vs_input_peak_4859
scaffold_701	210477	210750	274	210592	28	3.26041	trChip_vs_input_peak_5768
scaffold_11	4997518	4997899	382	4997682	19	3.25863	trChip_vs_input_peak_344
scaffold_208	1732530	1732996	467	1732845	19	3.25863	trChip_vs_input_peak_1827
scaffold_30	3627173	3627428	256	3627326	19	3.25863	trChip_vs_input_peak_2949

scaffold_301	1209801	1210043	243	1209869	19	3.25863	trChip_vs_input_peak_2961
scaffold_367	740859	741240	382	740948	19	3.25863	trChip_vs_input_peak_3546
scaffold_44	192475	192776	302	192749	19	3.25863	trChip_vs_input_peak_4212
scaffold_461	908077	908526	450	908390	19	3.25863	trChip_vs_input_peak_4377
scaffold_117	263817	264063	247	263935	26	3.25799	trChip_vs_input_peak_483
scaffold_145	861944	862349	406	862074	26	3.25799	trChip_vs_input_peak_988
scaffold_151	77524	78346	823	78155	26	3.25799	trChip_vs_input_peak_1081
scaffold_164	844274	844544	271	844430	26	3.25799	trChip_vs_input_peak_1276
scaffold_174	723771	724005	235	723814	26	3.25799	trChip_vs_input_peak_1414
scaffold_20	4312958	4313293	336	4313166	26	3.25799	trChip_vs_input_peak_1746
scaffold_21	727617	727989	373	727635	26	3.25799	trChip_vs_input_peak_1838
scaffold_247	1349454	1349688	235	1349495	26	3.25799	trChip_vs_input_peak_2266
scaffold_255	867476	867772	297	867540	26	3.25799	trChip_vs_input_peak_2357
scaffold_339	789804	790190	387	789892	26	3.25799	trChip_vs_input_peak_3303
scaffold_35	1578028	1578395	368	1578350	26	3.25799	trChip_vs_input_peak_3398
scaffold_367	803191	803488	298	803345	26	3.25799	trChip_vs_input_peak_3548
scaffold_38	3810278	3810664	387	3810549	26	3.25799	trChip_vs_input_peak_3725
scaffold_424	1023737	1024950	1214	1024671	26	3.25799	trChip_vs_input_peak_4113
scaffold_448	939557	939893	337	939805	26	3.25799	trChip_vs_input_peak_4287
scaffold_50	2662888	2663164	277	2663062	26	3.25799	trChip_vs_input_peak_4664
scaffold_6284	3146	3477	332	3366	26	3.25799	trChip_vs_input_peak_5333
scaffold_66	2602677	2603204	528	2602730	26	3.25799	trChip_vs_input_peak_5501
scaffold_71	505356	505717	362	505523	26	3.25799	trChip_vs_input_peak_5797
scaffold_718	14284	14772	489	14326	26	3.25799	trChip_vs_input_peak_5822
scaffold_72	3009717	3009951	235	3009820	26	3.25799	trChip_vs_input_peak_5839
scaffold_75	335109	335426	318	335281	26	3.25799	trChip_vs_input_peak_5940
scaffold_857	13440	14291	852	13635	26	3.25799	trChip_vs_input_peak_6379
scaffold_91	1367889	1368182	294	1368026	26	3.25799	trChip_vs_input_peak_6540
scaffold_10	4558638	4559013	376	4558785	24	3.25519	trChip_vs_input_peak_65
scaffold_105	2283824	2284081	258	2284009	24	3.25519	trChip_vs_input_peak_181
scaffold_1071	184378	184651	274	184540	24	3.25519	trChip_vs_input_peak_237
scaffold_1128	107030	107375	346	107120	24	3.25519	trChip_vs_input_peak_417
scaffold_12	5128981	5129389	409	5129211	24	3.25519	trChip_vs_input_peak_558
scaffold_127	738289	738530	242	738413	24	3.25519	trChip_vs_input_peak_687
scaffold_157	1908565	1908820	256	1908673	24	3.25519	trChip_vs_input_peak_1180
scaffold_20	3326833	3327202	370	3326991	24	3.25519	trChip_vs_input_peak_1742
scaffold_210	890492	890813	322	890657	24	3.25519	trChip_vs_input_peak_1856
scaffold_222	1497165	1497500	336	1497373	24	3.25519	trChip_vs_input_peak_2017
scaffold_244	1646034	1646476	443	1646165	24	3.25519	trChip_vs_input_peak_2231
scaffold_30	2203745	2204137	393	2203962	24	3.25519	trChip_vs_input_peak_2933

scaffold_317	1287180	1287680	501	1287464	24	3.25519	trChip_vs_input_peak_3106
scaffold_320	52922	53320	399	53088	24	3.25519	trChip_vs_input_peak_3130
scaffold_321	126501	126811	311	126616	24	3.25519	trChip_vs_input_peak_3139
scaffold_321	929225	929629	405	929450	24	3.25519	trChip_vs_input_peak_3144
scaffold_44	2476950	2477327	378	2477125	24	3.25519	trChip_vs_input_peak_4235
scaffold_460	88156	88567	412	88373	24	3.25519	trChip_vs_input_peak_4359
scaffold_475	664192	664506	315	664303	24	3.25519	trChip_vs_input_peak_4480
scaffold_48	2795300	2795940	641	2795610	24	3.25519	trChip_vs_input_peak_4522
scaffold_503	294476	294766	291	294621	24	3.25519	trChip_vs_input_peak_4688
scaffold_560	366551	367005	455	366724	24	3.25519	trChip_vs_input_peak_4998
scaffold_567	730687	731190	504	730985	24	3.25519	trChip_vs_input_peak_5040
scaffold_5967	417	660	244	514	24	3.25519	trChip_vs_input_peak_5177
scaffold_6	6026346	6026656	311	6026384	24	3.25519	trChip_vs_input_peak_5212
scaffold_7	2469126	2469388	263	2469250	24	3.25519	trChip_vs_input_peak_5727
scaffold_71	673761	674371	611	674284	24	3.25519	trChip_vs_input_peak_5799
scaffold_798	307323	307624	302	307517	24	3.25519	trChip_vs_input_peak_6148
scaffold_82	2597594	2597875	282	2597658	24	3.25519	trChip_vs_input_peak_6247
scaffold_879	85473	85748	276	85548	24	3.25519	trChip_vs_input_peak_6435
scaffold_92	2734337	2734581	245	2734502	24	3.25519	trChip_vs_input_peak_6576
scaffold_11	3462170	3462460	291	3462348	25	3.25293	trChip_vs_input_peak_332
scaffold_295	379894	380143	250	379945	25	3.25293	trChip_vs_input_peak_2831
scaffold_36	590586	590869	284	590675	25	3.25293	trChip_vs_input_peak_3486
scaffold_54	2584233	2584475	243	2584278	25	3.25293	trChip_vs_input_peak_4883
scaffold_55	3324226	3324473	248	3324295	25	3.25293	trChip_vs_input_peak_4954
scaffold_21	3796969	3797278	310	3797196	12	3.25252	trChip_vs_input_peak_1851
scaffold_10	154605	154855	251	154726	22	3.25191	trChip_vs_input_peak_44
scaffold_1000	52550	52817	268	52688	22	3.25191	trChip_vs_input_peak_77
scaffold_11	278757	278998	242	278836	22	3.25191	trChip_vs_input_peak_316
scaffold_1179	99790	100060	271	99996	22	3.25191	trChip_vs_input_peak_500
scaffold_1186	17507	17767	261	17634	22	3.25191	trChip_vs_input_peak_515
scaffold_13	208013	208358	346	208226	22	3.25191	trChip_vs_input_peak_724
scaffold_17	94529	94807	279	94731	22	3.25191	trChip_vs_input_peak_1334
scaffold_17	5163916	5164184	269	5164135	22	3.25191	trChip_vs_input_peak_1359
scaffold_172	1952329	1952588	260	1952484	22	3.25191	trChip_vs_input_peak_1382
scaffold_180	431632	432053	422	431849	22	3.25191	trChip_vs_input_peak_1514
scaffold_19	1485942	1486411	470	1486229	22	3.25191	trChip_vs_input_peak_1600
scaffold_228	102045	102701	657	102138	22	3.25191	trChip_vs_input_peak_2071
scaffold_248	1090751	1091041	291	1090897	22	3.25191	trChip_vs_input_peak_2279
scaffold_250	600157	600527	371	600331	22	3.25191	trChip_vs_input_peak_2310
scaffold_258	537024	537581	558	537376	22	3.25191	trChip_vs_input_peak_2389

scaffold_279	732219	732574	356	732358	22	3.25191	trChip_vs_input_peak_2626
scaffold_28	999318	999697	380	999477	22	3.25191	trChip_vs_input_peak_2645
scaffold_35	1549037	1549422	386	1549218	22	3.25191	trChip_vs_input_peak_3396
scaffold_4	381718	381984	267	381832	22	3.25191	trChip_vs_input_peak_3868
scaffold_47	2785867	2786126	260	2786100	22	3.25191	trChip_vs_input_peak_4421
scaffold_48	2055983	2056248	266	2056118	22	3.25191	trChip_vs_input_peak_4521
scaffold_542	271673	271907	235	271879	22	3.25191	trChip_vs_input_peak_4904
scaffold_58	534252	534498	247	534302	22	3.25191	trChip_vs_input_peak_5090
scaffold_624	344497	344759	263	344657	22	3.25191	trChip_vs_input_peak_5322
scaffold_670	293719	293953	235	293763	22	3.25191	trChip_vs_input_peak_5564
scaffold_7	5141086	5141351	266	5141319	22	3.25191	trChip_vs_input_peak_5743
scaffold_70	1624491	1624770	280	1624621	22	3.25191	trChip_vs_input_peak_5755
scaffold_77	3166053	3166411	359	3166109	22	3.25191	trChip_vs_input_peak_6051
scaffold_786	214157	214483	327	214281	22	3.25191	trChip_vs_input_peak_6106
scaffold_809	256149	256408	260	256262	22	3.25191	trChip_vs_input_peak_6202
scaffold_968	156839	157417	579	157272	22	3.25191	trChip_vs_input_peak_6688
scaffold_97	2408593	2408847	255	2408634	22	3.25191	trChip_vs_input_peak_6702
scaffold_105	2282352	2282586	235	2282481	20	3.24802	trChip_vs_input_peak_180
scaffold_123	2123617	2123906	290	2123828	20	3.24802	trChip_vs_input_peak_627
scaffold_1347	75774	76304	531	75960	20	3.24802	trChip_vs_input_peak_828
scaffold_135	1901702	1901962	261	1901791	20	3.24802	trChip_vs_input_peak_844
scaffold_159	563292	563619	328	563419	20	3.24802	trChip_vs_input_peak_1201
scaffold_16	4199101	4199431	331	4199207	20	3.24802	trChip_vs_input_peak_1231
scaffold_22	2033738	2034230	493	2033937	20	3.24802	trChip_vs_input_peak_1953
scaffold_255	1297040	1297331	292	1297248	20	3.24802	trChip_vs_input_peak_2362
scaffold_279	1337032	1337299	268	1337138	20	3.24802	trChip_vs_input_peak_2633
scaffold_281	1200750	1201162	413	1200800	20	3.24802	trChip_vs_input_peak_2695
scaffold_307	931992	932226	235	932098	20	3.24802	trChip_vs_input_peak_2998
scaffold_328	499550	499784	235	499687	20	3.24802	trChip_vs_input_peak_3204
scaffold_37	3307	3784	478	3496	20	3.24802	trChip_vs_input_peak_3566
scaffold_372	976937	977206	270	977045	20	3.24802	trChip_vs_input_peak_3628
scaffold_377	131358	131791	434	131569	20	3.24802	trChip_vs_input_peak_3669
scaffold_416	540746	540996	251	540896	20	3.24802	trChip_vs_input_peak_4044
scaffold_48	1464507	1464745	239	1464664	20	3.24802	trChip_vs_input_peak_4514
scaffold_51	2198010	2198244	235	2198129	20	3.24802	trChip_vs_input_peak_4729
scaffold_515	688943	689218	276	689130	20	3.24802	trChip_vs_input_peak_4764
scaffold_560	348968	349640	673	349439	20	3.24802	trChip_vs_input_peak_4989
scaffold_58	2491023	2491378	356	2491145	20	3.24802	trChip_vs_input_peak_5099
scaffold_59	3158553	3159076	524	3158673	20	3.24802	trChip_vs_input_peak_5159
scaffold_649	309877	310169	293	310078	20	3.24802	trChip_vs_input_peak_5436

scaffold_735	497252	497486	235	497380	20	3.24802	trChip_vs_input_peak_5895
scaffold_1087	59909	60151	243	60127	18	3.24668	trChip_vs_input_peak_282
scaffold_149	1550006	1550315	310	1550059	18	3.24668	trChip_vs_input_peak_1042
scaffold_416	78249	78768	520	78394	18	3.24668	trChip_vs_input_peak_4036
scaffold_503	780293	780547	255	780458	18	3.24668	trChip_vs_input_peak_4695
scaffold_529	735367	735648	282	735530	18	3.24668	trChip_vs_input_peak_4823
scaffold_19	2079387	2079632	246	2079579	24	3.24365	trChip_vs_input_peak_1603
scaffold_295	636642	636893	252	636718	24	3.24365	trChip_vs_input_peak_2833
scaffold_313	1155025	1155329	305	1155204	24	3.24365	trChip_vs_input_peak_3081
scaffold_393	1011542	1011778	237	1011591	24	3.24365	trChip_vs_input_peak_3817
scaffold_510	388295	388592	298	388445	24	3.24365	trChip_vs_input_peak_4733
scaffold_690	422662	422896	235	422777	24	3.24365	trChip_vs_input_peak_5689
scaffold_1	1571627	1572233	607	1571906	18	3.24331	trChip_vs_input_peak_10
scaffold_1068	32345	32616	272	32476	18	3.24331	trChip_vs_input_peak_220
scaffold_1326	72815	73053	239	72915	18	3.24331	trChip_vs_input_peak_791
scaffold_1714	19617	19909	293	19769	18	3.24331	trChip_vs_input_peak_1378
scaffold_198	1097371	1097619	249	1097420	18	3.24331	trChip_vs_input_peak_1670
scaffold_199	1606646	1606880	235	1606819	18	3.24331	trChip_vs_input_peak_1679
scaffold_202	424146	424766	621	424325	18	3.24331	trChip_vs_input_peak_1757
scaffold_2215	19994	20369	376	20195	18	3.24331	trChip_vs_input_peak_2003
scaffold_237	67560	67824	265	67756	18	3.24331	trChip_vs_input_peak_2154
scaffold_252	242265	242502	238	242343	18	3.24331	trChip_vs_input_peak_2344
scaffold_26	2438438	2438691	254	2438672	18	3.24331	trChip_vs_input_peak_2406
scaffold_278	1199769	1200088	320	1199946	18	3.24331	trChip_vs_input_peak_2614
scaffold_31	2123161	2123438	278	2123358	18	3.24331	trChip_vs_input_peak_3031
scaffold_316	130595	130899	305	130613	18	3.24331	trChip_vs_input_peak_3097
scaffold_334	850174	850608	435	850205	18	3.24331	trChip_vs_input_peak_3256
scaffold_353	251367	251601	235	251477	18	3.24331	trChip_vs_input_peak_3432
scaffold_408	1118479	1118751	273	1118607	18	3.24331	trChip_vs_input_peak_3964
scaffold_467	289808	290198	391	289902	18	3.24331	trChip_vs_input_peak_4391
scaffold_47	1191263	1191497	235	1191328	18	3.24331	trChip_vs_input_peak_4408
scaffold_47	2530387	2530637	251	2530510	18	3.24331	trChip_vs_input_peak_4418
scaffold_500	218077	218351	275	218219	18	3.24331	trChip_vs_input_peak_4669
scaffold_582	227443	227736	294	227612	18	3.24331	trChip_vs_input_peak_5112
scaffold_62	736621	736855	235	736626	18	3.24331	trChip_vs_input_peak_5305
scaffold_622	359875	360157	283	360086	18	3.24331	trChip_vs_input_peak_5319
scaffold_704	33602	33875	274	33669	18	3.24331	trChip_vs_input_peak_5776
scaffold_908	249681	249928	248	249914	18	3.24331	trChip_vs_input_peak_6530
scaffold_96	1983525	1983867	343	1983789	18	3.24331	trChip_vs_input_peak_6679
scaffold_307	231890	232236	347	232065	30	3.2418	trChip_vs_input_peak_2994

scaffold_560	466938	467294	357	467119	30	3.2418	trChip_vs_input_peak_4999
scaffold_11	5066502	5066765	264	5066676	16	3.23752	trChip_vs_input_peak_347
scaffold_119	951153	951521	369	951332	16	3.23752	trChip_vs_input_peak_519
scaffold_1221	84310	84544	235	84514	16	3.23752	trChip_vs_input_peak_610
scaffold_128	432244	432517	274	432346	16	3.23752	trChip_vs_input_peak_701
scaffold_133	332306	332540	235	332384	16	3.23752	trChip_vs_input_peak_794
scaffold_134	1471922	1472200	279	1472048	16	3.23752	trChip_vs_input_peak_816
scaffold_164	763009	763269	261	763132	16	3.23752	trChip_vs_input_peak_1275
scaffold_178	1524427	1524792	366	1524751	16	3.23752	trChip_vs_input_peak_1475
scaffold_232	142042	142314	273	142111	16	3.23752	trChip_vs_input_peak_2122
scaffold_273	618980	619214	235	619106	16	3.23752	trChip_vs_input_peak_2568
scaffold_277	394452	394731	280	394604	16	3.23752	trChip_vs_input_peak_2598
scaffold_284	1049988	1050268	281	1050123	16	3.23752	trChip_vs_input_peak_2722
scaffold_3399	154	533	380	510	16	3.23752	trChip_vs_input_peak_3304
scaffold_355	179316	179617	302	179546	16	3.23752	trChip_vs_input_peak_3446
scaffold_36	201273	201642	370	201409	16	3.23752	trChip_vs_input_peak_3482
scaffold_407	1043322	1043562	241	1043544	16	3.23752	trChip_vs_input_peak_3959
scaffold_51	1055159	1055463	305	1055268	16	3.23752	trChip_vs_input_peak_4728
scaffold_65	2551569	2551830	262	2551765	16	3.23752	trChip_vs_input_peak_5461
scaffold_6950	2744	3029	286	2857	16	3.23752	trChip_vs_input_peak_5703
scaffold_75	2729219	2729492	274	2729361	16	3.23752	trChip_vs_input_peak_5944
scaffold_75	3122786	3123168	383	3123020	16	3.23752	trChip_vs_input_peak_5945
scaffold_774	19350	19616	267	19522	16	3.23752	trChip_vs_input_peak_6057
scaffold_790	3988	4524	537	4347	16	3.23752	trChip_vs_input_peak_6123
scaffold_973	222321	222730	410	222620	16	3.23752	trChip_vs_input_peak_6708
scaffold_42	2541511	2541745	235	2541552	19	3.23605	trChip_vs_input_peak_4088
scaffold_44	3753129	3753625	497	3753445	35	3.2338	trChip_vs_input_peak_4240
scaffold_108	1178567	1178927	361	1178699	23	3.23365	trChip_vs_input_peak_258
scaffold_134	2042985	2043222	238	2043189	17	3.2335	trChip_vs_input_peak_822
scaffold_79	575144	575439	296	575279	17	3.2335	trChip_vs_input_peak_6116
scaffold_106	694150	694482	333	694304	18	3.23092	trChip_vs_input_peak_204
scaffold_110	919126	919421	296	919265	14	3.23021	trChip_vs_input_peak_359
scaffold_14	4797811	4798045	235	4797962	14	3.23021	trChip_vs_input_peak_917
scaffold_2403	16089	16384	296	16228	14	3.23021	trChip_vs_input_peak_2192
scaffold_311	821832	822138	307	822032	14	3.23021	trChip_vs_input_peak_3066
scaffold_540	201069	201352	284	201281	14	3.23021	trChip_vs_input_peak_4890
scaffold_5984	2273	2507	235	2450	14	3.23021	trChip_vs_input_peak_5185
scaffold_747	284202	284436	235	284238	14	3.23021	trChip_vs_input_peak_5932
scaffold_980	277819	278093	275	277986	14	3.23021	trChip_vs_input_peak_6721
scaffold_540	307787	308034	248	307850	28	3.22518	trChip_vs_input_peak_4894

scaffold_169	1837587	1837835	249	1837642	22	3.22286	trChip_vs_input_peak_1329
scaffold_247	557223	557457	235	557373	22	3.22286	trChip_vs_input_peak_2262
scaffold_337	799549	799789	241	799661	22	3.22286	trChip_vs_input_peak_3282
scaffold_50	1009512	1010175	664	1009946	22	3.22286	trChip_vs_input_peak_4660
scaffold_87	367684	368314	631	368083	22	3.22286	trChip_vs_input_peak_6414
scaffold_772	376273	376568	296	376372	15	3.22104	trChip_vs_input_peak_6056
scaffold_11	238541	238775	235	238630	12	3.22071	trChip_vs_input_peak_314
scaffold_212	1654990	1655301	312	1655134	12	3.22071	trChip_vs_input_peak_1877
scaffold_28	3754089	3754323	235	3754232	12	3.22071	trChip_vs_input_peak_2660
scaffold_349	1094537	1094776	240	1094626	12	3.22071	trChip_vs_input_peak_3384
scaffold_451	837561	837838	278	837739	12	3.22071	trChip_vs_input_peak_4324
scaffold_506	126418	126737	320	126528	12	3.22071	trChip_vs_input_peak_4705
scaffold_544	358868	359102	235	358982	12	3.22071	trChip_vs_input_peak_4913
scaffold_647	201291	201623	333	201409	12	3.22071	trChip_vs_input_peak_5423
scaffold_77	434197	434515	319	434405	12	3.22071	trChip_vs_input_peak_6021
scaffold_130	1547679	1547945	267	1547928	16	3.21891	trChip_vs_input_peak_750
scaffold_211	1407603	1407975	373	1407854	16	3.21891	trChip_vs_input_peak_1870
scaffold_674	239310	239568	259	239387	16	3.21891	trChip_vs_input_peak_5591
scaffold_94	1734245	1734605	361	1734445	16	3.21891	trChip_vs_input_peak_6622
scaffold_248	942361	942710	350	942619	27	3.21605	trChip_vs_input_peak_2278
scaffold_685	427485	427799	315	427705	27	3.21605	trChip_vs_input_peak_5639
scaffold_339	43296	43731	436	43425	21	3.21116	trChip_vs_input_peak_3293
scaffold_73	757230	757485	256	757440	21	3.21116	trChip_vs_input_peak_5875
scaffold_76	2548411	2548668	258	2548494	21	3.21116	trChip_vs_input_peak_5980
scaffold_366	1192012	1192295	284	1192275	10	3.21068	trChip_vs_input_peak_3538
scaffold_264	297562	297796	235	297683	10	3.20784	trChip_vs_input_peak_2452
scaffold_950	148370	148716	347	148662	12	3.20672	trChip_vs_input_peak_6640
scaffold_301	463937	464449	513	464171	26	3.2063	trChip_vs_input_peak_2959
scaffold_498	430810	431089	280	430946	26	3.2063	trChip_vs_input_peak_4632
scaffold_817	298165	298665	501	298255	26	3.2063	trChip_vs_input_peak_6231
scaffold_34	3292401	3292652	252	3292546	15	3.20264	trChip_vs_input_peak_3326
scaffold_35	1350061	1350512	452	1350182	43	3.19935	trChip_vs_input_peak_3391
scaffold_108	2683988	2684353	366	2684202	20	3.19845	trChip_vs_input_peak_266
scaffold_130	1428661	1428909	249	1428796	20	3.19845	trChip_vs_input_peak_748
scaffold_242	1317127	1317469	343	1317183	20	3.19845	trChip_vs_input_peak_2206
scaffold_44	1907803	1908052	250	1907890	20	3.19845	trChip_vs_input_peak_4229
scaffold_154	1613852	1614177	326	1613967	25	3.19587	trChip_vs_input_peak_1133
scaffold_18	2561966	2562314	349	2562164	25	3.19587	trChip_vs_input_peak_1506
scaffold_326	214872	215169	298	214987	25	3.19587	trChip_vs_input_peak_3184
scaffold_72	298580	298856	277	298749	25	3.19587	trChip_vs_input_peak_5828

scaffold_83	2416090	2416437	348	2416261	25	3.19587	trChip_vs_input_peak_6296
scaffold_296	165238	165556	319	165428	41	3.195	trChip_vs_input_peak_2841
scaffold_159	332140	332746	607	332529	39	3.19024	trChip_vs_input_peak_1198
scaffold_139	103998	104933	936	104314	37	3.18499	trChip_vs_input_peak_890
scaffold_3	970040	970404	365	970365	37	3.18499	trChip_vs_input_peak_2870
scaffold_87	2744683	2744919	237	2744746	24	3.18468	trChip_vs_input_peak_6423
scaffold_143	1539469	1539712	244	1539672	19	3.18458	trChip_vs_input_peak_957
scaffold_154	1192305	1192539	235	1192321	19	3.18458	trChip_vs_input_peak_1129
scaffold_173	359597	359831	235	359658	19	3.18458	trChip_vs_input_peak_1385
scaffold_295	191043	191310	268	191202	19	3.18458	trChip_vs_input_peak_2830
scaffold_6	5342816	5343050	235	5342911	19	3.18458	trChip_vs_input_peak_5211
scaffold_422	827100	827334	235	827145	16	3.18449	trChip_vs_input_peak_4098
scaffold_240	905982	906216	235	906150	14	3.18441	trChip_vs_input_peak_2188
scaffold_416	858203	858437	235	858430	14	3.18441	trChip_vs_input_peak_4045
scaffold_101	911593	911922	330	911751	35	3.17918	trChip_vs_input_peak_85
scaffold_140	564936	565439	504	565239	35	3.17918	trChip_vs_input_peak_926
scaffold_155	1574189	1574453	265	1574312	35	3.17918	trChip_vs_input_peak_1153
scaffold_46	204183	204437	255	204320	35	3.17918	trChip_vs_input_peak_4350
scaffold_651	462917	463449	533	463110	35	3.17918	trChip_vs_input_peak_5471
scaffold_714	364431	364829	399	364626	35	3.17918	trChip_vs_input_peak_5807
scaffold_84	2179289	2179610	322	2179485	35	3.17918	trChip_vs_input_peak_6329
scaffold_91	1835903	1836200	298	1836000	35	3.17918	trChip_vs_input_peak_6544
scaffold_822	253670	253966	297	253874	28	3.17479	trChip_vs_input_peak_6258
scaffold_1104	123129	123516	388	123358	33	3.1727	trChip_vs_input_peak_373
scaffold_144	1681696	1682138	443	1681836	33	3.1727	trChip_vs_input_peak_972
scaffold_270	126622	126994	373	126787	33	3.1727	trChip_vs_input_peak_2548
scaffold_325	871950	872480	531	872201	33	3.1727	trChip_vs_input_peak_3170
scaffold_336	456015	456338	324	456131	33	3.1727	trChip_vs_input_peak_3269
scaffold_519	579050	579640	591	579438	33	3.1727	trChip_vs_input_peak_4782
scaffold_857	286269	286627	359	286442	33	3.1727	trChip_vs_input_peak_6382
scaffold_31	3603814	3604126	313	3603973	23	3.17265	trChip_vs_input_peak_3046
scaffold_648	492024	492309	286	492125	23	3.17265	trChip_vs_input_peak_5428
scaffold_202	1618417	1618716	300	1618617	18	3.16939	trChip_vs_input_peak_1772
scaffold_207	166848	167407	560	167246	18	3.16939	trChip_vs_input_peak_1808
scaffold_356	450178	450452	275	450397	18	3.16939	trChip_vs_input_peak_3464
scaffold_911	194355	194650	296	194550	18	3.16939	trChip_vs_input_peak_6555
scaffold_102	1548852	1549224	373	1549016	31	3.16545	trChip_vs_input_peak_122
scaffold_1174	27836	28242	407	27963	31	3.16545	trChip_vs_input_peak_495
scaffold_1285	12676	13026	351	12849	31	3.16545	trChip_vs_input_peak_706
scaffold_129	1828017	1828418	402	1828191	31	3.16545	trChip_vs_input_peak_720

scaffold_1502	28966	29268	303	29094	31	3.16545	trChip_vs_input_peak_1076
scaffold_41	3846718	3847057	340	3846951	31	3.16545	trChip_vs_input_peak_3990
scaffold_501	767168	767675	508	767444	31	3.16545	trChip_vs_input_peak_4677
scaffold_512	263698	264010	313	263853	31	3.16545	trChip_vs_input_peak_4741
scaffold_64	665321	666295	975	666123	31	3.16545	trChip_vs_input_peak_5382
scaffold_70	48879	49685	807	49468	31	3.16545	trChip_vs_input_peak_5750
scaffold_824	174558	175023	466	174951	31	3.16545	trChip_vs_input_peak_6266
scaffold_138	675126	675398	273	675329	27	3.16418	trChip_vs_input_peak_881
scaffold_376	1122775	1123051	277	1122977	27	3.16418	trChip_vs_input_peak_3666
scaffold_462	425690	425971	282	425786	27	3.16418	trChip_vs_input_peak_4379
scaffold_65	1388542	1388954	413	1388692	18	3.16186	trChip_vs_input_peak_5452
scaffold_105	2109629	2109863	235	2109831	22	3.15967	trChip_vs_input_peak_178
scaffold_37	913239	913511	273	913341	22	3.15967	trChip_vs_input_peak_3573
scaffold_115	47860	48131	272	48005	29	3.15728	trChip_vs_input_peak_462
scaffold_118	207985	208465	481	208060	29	3.15728	trChip_vs_input_peak_504
scaffold_1266	33860	34732	873	33962	29	3.15728	trChip_vs_input_peak_681
scaffold_136	822010	822628	619	822186	29	3.15728	trChip_vs_input_peak_853
scaffold_142	1308181	1308511	331	1308327	29	3.15728	trChip_vs_input_peak_939
scaffold_1642	7296	7807	512	7579	29	3.15728	trChip_vs_input_peak_1281
scaffold_185	1114789	1115044	256	1114993	29	3.15728	trChip_vs_input_peak_1552
scaffold_187	1375866	1376318	453	1376212	29	3.15728	trChip_vs_input_peak_1566
scaffold_207	1144970	1145575	606	1145448	29	3.15728	trChip_vs_input_peak_1821
scaffold_275	748401	748900	500	748610	29	3.15728	trChip_vs_input_peak_2587
scaffold_346	436612	437124	513	436781	29	3.15728	trChip_vs_input_peak_3373
scaffold_35	1588575	1589021	447	1588889	29	3.15728	trChip_vs_input_peak_3401
scaffold_35	1598683	1599632	950	1599047	29	3.15728	trChip_vs_input_peak_3403
scaffold_355	1109162	1109434	273	1109293	29	3.15728	trChip_vs_input_peak_3455
scaffold_414	914045	914672	628	914340	29	3.15728	trChip_vs_input_peak_4029
scaffold_45	3024060	3024513	454	3024262	29	3.15728	trChip_vs_input_peak_4315
scaffold_504	628742	629117	376	628965	29	3.15728	trChip_vs_input_peak_4701
scaffold_593	128583	129210	628	128802	29	3.15728	trChip_vs_input_peak_5169
scaffold_636	564218	564452	235	564330	29	3.15728	trChip_vs_input_peak_5365
scaffold_66	3227457	3227782	326	3227619	29	3.15728	trChip_vs_input_peak_5504
scaffold_666	320223	320679	457	320449	29	3.15728	trChip_vs_input_peak_5524
scaffold_674	328547	328874	328	328696	29	3.15728	trChip_vs_input_peak_5592
scaffold_76	2452791	2454445	1655	2452982	29	3.15728	trChip_vs_input_peak_5975
scaffold_199	1544171	1544636	466	1544348	19	3.15589	trChip_vs_input_peak_1676
scaffold_272	1056533	1057034	502	1056648	26	3.15287	trChip_vs_input_peak_2564
scaffold_80	1236442	1236677	236	1236496	26	3.15287	trChip_vs_input_peak_6177
scaffold_319	1107107	1107406	300	1107204	17	3.15268	trChip_vs_input_peak_3118

scaffold_336	555506	555759	254	555574	17	3.15268	trChip_vs_input_peak_3271
scaffold_560	363648	364081	434	363676	17	3.15268	trChip_vs_input_peak_4997
scaffold_122	1648882	1649198	317	1649092	27	3.14798	trChip_vs_input_peak_602
scaffold_131	1988353	1988648	296	1988469	27	3.14798	trChip_vs_input_peak_769
scaffold_131	2130230	2130570	341	2130413	27	3.14798	trChip_vs_input_peak_770
scaffold_152	683098	683472	375	683447	27	3.14798	trChip_vs_input_peak_1098
scaffold_155	693267	693543	277	693462	27	3.14798	trChip_vs_input_peak_1143
scaffold_224	1260339	1260867	529	1260481	27	3.14798	trChip_vs_input_peak_2034
scaffold_267	950777	951046	270	950882	27	3.14798	trChip_vs_input_peak_2481
scaffold_3	4473429	4473762	334	4473554	27	3.14798	trChip_vs_input_peak_2892
scaffold_30	2073605	2074010	406	2073638	27	3.14798	trChip_vs_input_peak_2930
scaffold_319	1186956	1187357	402	1187186	27	3.14798	trChip_vs_input_peak_3120
scaffold_40	3612141	3612550	410	3612350	27	3.14798	trChip_vs_input_peak_3906
scaffold_525	613548	613831	284	613694	27	3.14798	trChip_vs_input_peak_4809
scaffold_538	763509	763980	472	763732	27	3.14798	trChip_vs_input_peak_4869
scaffold_690	254152	254544	393	254239	27	3.14798	trChip_vs_input_peak_5686
scaffold_744	448153	448387	235	448235	27	3.14798	trChip_vs_input_peak_5929
scaffold_90	1827423	1827850	428	1827685	27	3.14798	trChip_vs_input_peak_6502
scaffold_218	1581901	1582220	320	1582109	21	3.14564	trChip_vs_input_peak_1925
scaffold_673	165867	166102	236	166037	21	3.14564	trChip_vs_input_peak_5588
scaffold_256	905252	905594	343	905299	25	3.14078	trChip_vs_input_peak_2373
scaffold_260	775804	776356	553	776182	25	3.14078	trChip_vs_input_peak_2415
scaffold_339	266690	266947	258	266783	25	3.14078	trChip_vs_input_peak_3294
scaffold_376	755047	755358	312	755244	25	3.14078	trChip_vs_input_peak_3660
scaffold_1	6053617	6054054	438	6053827	25	3.13733	trChip_vs_input_peak_31
scaffold_1246	111882	112138	257	111964	25	3.13733	trChip_vs_input_peak_649
scaffold_1250	35476	35719	244	35516	25	3.13733	trChip_vs_input_peak_666
scaffold_152	833272	833690	419	833489	25	3.13733	trChip_vs_input_peak_1099
scaffold_17	5186406	5186816	411	5186601	25	3.13733	trChip_vs_input_peak_1360
scaffold_174	518340	518667	328	518434	25	3.13733	trChip_vs_input_peak_1405
scaffold_178	1160218	1160678	461	1160277	25	3.13733	trChip_vs_input_peak_1471
scaffold_203	859273	859608	336	859527	25	3.13733	trChip_vs_input_peak_1780
scaffold_228	211180	211432	253	211323	25	3.13733	trChip_vs_input_peak_2072
scaffold_245	116984	117310	327	117142	25	3.13733	trChip_vs_input_peak_2234
scaffold_245	1516302	1516554	253	1516434	25	3.13733	trChip_vs_input_peak_2242
scaffold_250	1434820	1435054	235	1434954	25	3.13733	trChip_vs_input_peak_2319
scaffold_285	19567	19997	431	19833	25	3.13733	trChip_vs_input_peak_2729
scaffold_288	748838	749100	263	748971	25	3.13733	trChip_vs_input_peak_2757
scaffold_329	1092484	1092789	306	1092585	25	3.13733	trChip_vs_input_peak_3210
scaffold_339	397894	398169	276	397968	25	3.13733	trChip_vs_input_peak_3298

scaffold_35	1419565	1419811	247	1419587	25	3.13733	trChip_vs_input_peak_3393
scaffold_389	54570	54842	273	54742	25	3.13733	trChip_vs_input_peak_3768
scaffold_48	783732	783978	247	783877	25	3.13733	trChip_vs_input_peak_4509
scaffold_560	607366	607600	235	607428	25	3.13733	trChip_vs_input_peak_5005
scaffold_579	328201	328821	621	328791	25	3.13733	trChip_vs_input_peak_5077
scaffold_6	685043	685298	256	685201	25	3.13733	trChip_vs_input_peak_5195
scaffold_6	6027661	6028025	365	6027837	25	3.13733	trChip_vs_input_peak_5213
scaffold_61	3123452	3123891	440	3123757	25	3.13733	trChip_vs_input_peak_5265
scaffold_742	363279	363898	620	363843	25	3.13733	trChip_vs_input_peak_5922
scaffold_77	1604718	1604970	253	1604772	25	3.13733	trChip_vs_input_peak_6028
scaffold_792	370480	370853	374	370699	25	3.13733	trChip_vs_input_peak_6136
scaffold_795	252045	252397	353	252085	25	3.13733	trChip_vs_input_peak_6143
scaffold_842	85727	86273	547	85795	25	3.13733	trChip_vs_input_peak_6335
scaffold_64	1395108	1395407	300	1395325	16	3.13422	trChip_vs_input_peak_5390
scaffold_456	780985	781223	239	781091	44	3.13369	trChip_vs_input_peak_4340
scaffold_414	814239	814473	235	814432	15	3.13109	trChip_vs_input_peak_4026
scaffold_61	2109370	2109638	269	2109568	15	3.13109	trChip_vs_input_peak_5263
scaffold_26	3708719	3708975	257	3708910	20	3.13041	trChip_vs_input_peak_2410
scaffold_65	713699	713949	251	713785	20	3.13041	trChip_vs_input_peak_5451
scaffold_2	1451119	1451376	258	1451258	24	3.12782	trChip_vs_input_peak_1697
scaffold_20	2649787	2650082	296	2649897	24	3.12782	trChip_vs_input_peak_1738
scaffold_208	226552	226848	297	226652	24	3.12782	trChip_vs_input_peak_1822
scaffold_857	79530	80124	595	79958	24	3.12782	trChip_vs_input_peak_6380
scaffold_1073	74157	74666	510	74492	23	3.12499	trChip_vs_input_peak_239
scaffold_111	2081736	2082282	547	2081938	23	3.12499	trChip_vs_input_peak_381
scaffold_1134	80879	81202	324	80973	23	3.12499	trChip_vs_input_peak_437
scaffold_120	2020350	2020616	267	2020546	23	3.12499	trChip_vs_input_peak_568
scaffold_121	1206003	1206281	279	1206101	23	3.12499	trChip_vs_input_peak_580
scaffold_123	2205886	2206440	555	2206094	23	3.12499	trChip_vs_input_peak_628
scaffold_149	1531683	1532000	318	1531849	23	3.12499	trChip_vs_input_peak_1041
scaffold_17	2498070	2498362	293	2498171	23	3.12499	trChip_vs_input_peak_1347
scaffold_1756	24185	24593	409	24333	23	3.12499	trChip_vs_input_peak_1440
scaffold_18	1020144	1020416	273	1020326	23	3.12499	trChip_vs_input_peak_1500
scaffold_181	931949	932438	490	932385	23	3.12499	trChip_vs_input_peak_1528
scaffold_2	1610977	1611235	259	1611182	23	3.12499	trChip_vs_input_peak_1698
scaffold_20	3781872	3782235	364	3782024	23	3.12499	trChip_vs_input_peak_1745
scaffold_219	1192159	1192467	309	1192364	23	3.12499	trChip_vs_input_peak_1937
scaffold_309	321484	321718	235	321649	23	3.12499	trChip_vs_input_peak_3007
scaffold_309	1237203	1237449	247	1237324	23	3.12499	trChip_vs_input_peak_3015
scaffold_374	1096688	1096924	237	1096830	23	3.12499	trChip_vs_input_peak_3645

scaffold_427	725776	726042	267	725817	23	3.12499	trChip_vs_input_peak_4145
scaffold_428	720815	721106	292	720891	23	3.12499	trChip_vs_input_peak_4149
scaffold_604	12019	12590	572	12169	23	3.12499	trChip_vs_input_peak_5241
scaffold_61	3150763	3151127	365	3150830	23	3.12499	trChip_vs_input_peak_5266
scaffold_708	233234	233468	235	233268	23	3.12499	trChip_vs_input_peak_5787
scaffold_94	2746086	2746383	298	2746226	23	3.12499	trChip_vs_input_peak_6624
scaffold_436	952129	952654	526	952500	32	3.12454	trChip_vs_input_peak_4197
scaffold_113	156359	156725	367	156569	40	3.11893	trChip_vs_input_peak_419
scaffold_73	648756	649091	336	648965	40	3.11893	trChip_vs_input_peak_5870
scaffold_17	1644969	1645251	283	1645112	23	3.11391	trChip_vs_input_peak_1344
scaffold_337	798865	799157	293	798959	23	3.11391	trChip_vs_input_peak_3281
scaffold_343	406714	406959	246	406782	23	3.11391	trChip_vs_input_peak_3355
scaffold_468	603432	603670	239	603638	23	3.11391	trChip_vs_input_peak_4393
scaffold_495	548915	549217	303	549096	23	3.11391	trChip_vs_input_peak_4622
scaffold_227	409228	409466	239	409314	19	3.11382	trChip_vs_input_peak_2060
scaffold_310	177342	177676	335	177421	19	3.11382	trChip_vs_input_peak_3054
scaffold_495	126431	126738	308	126559	19	3.11382	trChip_vs_input_peak_4618
scaffold_923	208172	208408	237	208185	19	3.11382	trChip_vs_input_peak_6583
scaffold_327	365023	365257	235	365248	15	3.1137	trChip_vs_input_peak_3193
scaffold_338	1269673	1269931	259	1269816	15	3.1137	trChip_vs_input_peak_3291
scaffold_506	87119	87374	256	87329	15	3.1137	trChip_vs_input_peak_4704
scaffold_571	461131	461646	516	461567	15	3.1137	trChip_vs_input_peak_5060
scaffold_113	1131288	1131843	556	1131787	21	3.11053	trChip_vs_input_peak_424
scaffold_1202	124250	124564	315	124453	21	3.11053	trChip_vs_input_peak_571
scaffold_189	854156	854453	298	854259	21	3.11053	trChip_vs_input_peak_1581
scaffold_211	622145	622608	464	622203	21	3.11053	trChip_vs_input_peak_1865
scaffold_235	1017867	1018170	304	1018099	21	3.11053	trChip_vs_input_peak_2148
scaffold_27	1225244	1225566	323	1225272	21	3.11053	trChip_vs_input_peak_2517
scaffold_27	1448814	1449048	235	1448995	21	3.11053	trChip_vs_input_peak_2519
scaffold_270	327644	327980	337	327848	21	3.11053	trChip_vs_input_peak_2549
scaffold_296	944856	945110	255	944933	21	3.11053	trChip_vs_input_peak_2844
scaffold_309	711759	712163	405	712103	21	3.11053	trChip_vs_input_peak_3013
scaffold_31	1061264	1061528	265	1061445	21	3.11053	trChip_vs_input_peak_3022
scaffold_343	692667	692924	258	692739	21	3.11053	trChip_vs_input_peak_3358
scaffold_35	1369320	1369624	305	1369421	21	3.11053	trChip_vs_input_peak_3392
scaffold_352	211022	211451	430	211239	21	3.11053	trChip_vs_input_peak_3427
scaffold_42	121718	121991	274	121862	21	3.11053	trChip_vs_input_peak_4064
scaffold_446	692420	692748	329	692641	21	3.11053	trChip_vs_input_peak_4268
scaffold_45	19076	19322	247	19185	21	3.11053	trChip_vs_input_peak_4299
scaffold_478	373130	373593	464	373240	21	3.11053	trChip_vs_input_peak_4500

scaffold_495	507282	507584	303	507554	21	3.11053	trChip_vs_input_peak_4621
scaffold_5	3850882	3851126	245	3851009	21	3.11053	trChip_vs_input_peak_4652
scaffold_54	575413	575709	297	575521	21	3.11053	trChip_vs_input_peak_4875
scaffold_540	626551	626799	249	626703	21	3.11053	trChip_vs_input_peak_4898
scaffold_568	350977	351211	235	351012	21	3.11053	trChip_vs_input_peak_5041
scaffold_589	270497	271167	671	271034	21	3.11053	trChip_vs_input_peak_5145
scaffold_65	1389556	1389859	304	1389748	21	3.11053	trChip_vs_input_peak_5453
scaffold_661	277845	278135	291	278055	21	3.11053	trChip_vs_input_peak_5509
scaffold_661	321467	321708	242	321499	21	3.11053	trChip_vs_input_peak_5512
scaffold_67	1601880	1602169	290	1602085	21	3.11053	trChip_vs_input_peak_5552
scaffold_69	274206	274486	281	274388	21	3.11053	trChip_vs_input_peak_5656
scaffold_728	357252	357693	442	357372	21	3.11053	trChip_vs_input_peak_5867
scaffold_76	2355581	2355944	364	2355910	21	3.11053	trChip_vs_input_peak_5972
scaffold_76	2638523	2638839	317	2638694	21	3.11053	trChip_vs_input_peak_5994
scaffold_794	256180	256430	251	256220	21	3.11053	trChip_vs_input_peak_6139
scaffold_87	367293	367601	309	367383	21	3.11053	trChip_vs_input_peak_6413
scaffold_90	1297520	1297850	331	1297595	21	3.11053	trChip_vs_input_peak_6499
scaffold_142	1102824	1103875	1052	1103099	38	3.11048	trChip_vs_input_peak_938
scaffold_158	509670	510169	500	509743	34	3.10418	trChip_vs_input_peak_1183
scaffold_110	988962	989774	813	989393	36	3.10117	trChip_vs_input_peak_360
scaffold_393	903069	903303	235	903202	36	3.10117	trChip_vs_input_peak_3815
scaffold_546	621830	622233	404	622046	36	3.10117	trChip_vs_input_peak_4924
scaffold_676	304382	304650	269	304536	36	3.10117	trChip_vs_input_peak_5599
scaffold_247	1653587	1653927	341	1653733	22	3.09892	trChip_vs_input_peak_2268
scaffold_30	2073273	2073510	238	2073471	22	3.09892	trChip_vs_input_peak_2929
scaffold_337	398421	399061	641	398668	22	3.09892	trChip_vs_input_peak_3277
scaffold_337	1232877	1233237	361	1233058	22	3.09892	trChip_vs_input_peak_3284
scaffold_651	360702	360992	291	360931	22	3.09892	trChip_vs_input_peak_5470
scaffold_7	2695089	2695409	321	2695140	22	3.09892	trChip_vs_input_peak_5731
scaffold_35	1548312	1548645	334	1548465	17	3.09847	trChip_vs_input_peak_3395
scaffold_168	659045	659279	235	659110	18	3.0957	trChip_vs_input_peak_1321
scaffold_388	725676	725920	245	725874	18	3.0957	trChip_vs_input_peak_3767
scaffold_106	592046	592282	237	592053	19	3.09335	trChip_vs_input_peak_200
scaffold_110	284545	284786	242	284605	19	3.09335	trChip_vs_input_peak_353
scaffold_1116	100058	100302	245	100099	19	3.09335	trChip_vs_input_peak_391
scaffold_114	2068505	2068923	419	2068717	19	3.09335	trChip_vs_input_peak_447
scaffold_119	931421	931673	253	931575	19	3.09335	trChip_vs_input_peak_518
scaffold_125	1932736	1933039	304	1932929	19	3.09335	trChip_vs_input_peak_664
scaffold_134	398255	398546	292	398317	19	3.09335	trChip_vs_input_peak_808
scaffold_154	2146581	2146984	404	2146784	19	3.09335	trChip_vs_input_peak_1137

scaffold_186	1742339	1742651	313	1742521	19	3.09335	trChip_vs_input_peak_1563
scaffold_202	1668099	1668489	391	1668123	19	3.09335	trChip_vs_input_peak_1774
scaffold_228	1025011	1025294	284	1025079	19	3.09335	trChip_vs_input_peak_2075
scaffold_231	728099	728333	235	728244	19	3.09335	trChip_vs_input_peak_2117
scaffold_24	3587391	3588024	634	3587952	19	3.09335	trChip_vs_input_peak_2182
scaffold_245	1119187	1119448	262	1119274	19	3.09335	trChip_vs_input_peak_2238
scaffold_267	956137	956397	261	956289	19	3.09335	trChip_vs_input_peak_2485
scaffold_3013	237	646	410	418	19	3.09335	trChip_vs_input_peak_2962
scaffold_303	787136	787657	522	787565	19	3.09335	trChip_vs_input_peak_2971
scaffold_376	636657	636919	263	636869	19	3.09335	trChip_vs_input_peak_3655
scaffold_386	278935	279181	247	279137	19	3.09335	trChip_vs_input_peak_3760
scaffold_448	227787	228243	457	227858	19	3.09335	trChip_vs_input_peak_4279
scaffold_459	939561	939823	263	939771	19	3.09335	trChip_vs_input_peak_4349
scaffold_64	1186455	1186879	425	1186548	19	3.09335	trChip_vs_input_peak_5387
scaffold_646	138338	138609	272	138380	19	3.09335	trChip_vs_input_peak_5418
scaffold_823	166021	166324	304	166202	19	3.09335	trChip_vs_input_peak_6264
scaffold_86	1715173	1715407	235	1715207	19	3.09335	trChip_vs_input_peak_6385
scaffold_93	2494575	2494809	235	2494641	19	3.09335	trChip_vs_input_peak_6598
scaffold_936	98758	99012	255	98940	19	3.09335	trChip_vs_input_peak_6610
scaffold_990	188426	188838	413	188641	19	3.09335	trChip_vs_input_peak_6745
scaffold_209	1309280	1309579	300	1309367	29	3.09109	trChip_vs_input_peak_1831
scaffold_4	6457337	6457634	298	6457374	29	3.09109	trChip_vs_input_peak_3891
scaffold_130	1553759	1554115	357	1553971	34	3.09086	trChip_vs_input_peak_754
scaffold_14	2682126	2682742	617	2682372	34	3.09086	trChip_vs_input_peak_908
scaffold_4	5318056	5318539	484	5318193	34	3.09086	trChip_vs_input_peak_3885
scaffold_473	532319	532905	587	532774	34	3.09086	trChip_vs_input_peak_4444
scaffold_61	86663	87362	700	87265	34	3.09086	trChip_vs_input_peak_5261
scaffold_77	2146869	2147305	437	2147043	34	3.09086	trChip_vs_input_peak_6032
scaffold_805	336958	337212	255	337137	34	3.09086	trChip_vs_input_peak_6191
scaffold_131	1558894	1559174	281	1559111	14	3.09077	trChip_vs_input_peak_767
scaffold_157	1272019	1272254	236	1272143	14	3.09077	trChip_vs_input_peak_1178
scaffold_160	1996380	1996662	283	1996444	25	3.08755	trChip_vs_input_peak_1245
scaffold_251	1167873	1168203	331	1167997	25	3.08755	trChip_vs_input_peak_2332
scaffold_327	592869	593348	480	592949	32	3.08288	trChip_vs_input_peak_3195
scaffold_101	36820	37109	290	36967	21	3.08273	trChip_vs_input_peak_82
scaffold_410	875286	875717	432	875554	21	3.08273	trChip_vs_input_peak_4001
scaffold_69	1563215	1563461	247	1563267	21	3.08273	trChip_vs_input_peak_5676
scaffold_144	290987	291238	252	291055	32	3.07939	trChip_vs_input_peak_964
scaffold_1970	16856	17109	254	16933	32	3.07939	trChip_vs_input_peak_1661
scaffold_218	1408616	1409141	526	1408822	32	3.07939	trChip_vs_input_peak_1924

scaffold_314	139409	139677	269	139568	32	3.07939	trChip_vs_input_peak_3084
scaffold_396	800865	801284	420	801077	32	3.07939	trChip_vs_input_peak_3830
scaffold_456	673715	674921	1207	674455	32	3.07939	trChip_vs_input_peak_4338
scaffold_58	1008678	1009152	475	1008713	32	3.07939	trChip_vs_input_peak_5093
scaffold_6	683600	683852	253	683823	32	3.07939	trChip_vs_input_peak_5193
scaffold_814	108762	109554	793	109382	32	3.07939	trChip_vs_input_peak_6222
scaffold_122	651760	652089	330	651908	28	3.0786	trChip_vs_input_peak_595
scaffold_13	913020	913285	266	913105	17	3.0758	trChip_vs_input_peak_730
scaffold_174	558262	558615	354	558379	17	3.0758	trChip_vs_input_peak_1406
scaffold_708	232870	233130	261	232940	17	3.0758	trChip_vs_input_peak_5786
scaffold_294	1230005	1230244	240	1230174	24	3.07295	trChip_vs_input_peak_2825
scaffold_12	1848709	1849207	499	1848801	17	3.07261	trChip_vs_input_peak_539
scaffold_1226	43164	43428	265	43336	17	3.07261	trChip_vs_input_peak_614
scaffold_1384	15544	15956	413	15660	17	3.07261	trChip_vs_input_peak_886
scaffold_16	1146006	1146240	235	1146010	17	3.07261	trChip_vs_input_peak_1216
scaffold_195	1468633	1468872	240	1468640	17	3.07261	trChip_vs_input_peak_1645
scaffold_199	169518	169804	287	169584	17	3.07261	trChip_vs_input_peak_1674
scaffold_27	1924509	1924743	235	1924548	17	3.07261	trChip_vs_input_peak_2528
scaffold_28	92066	92353	288	92230	17	3.07261	trChip_vs_input_peak_2639
scaffold_410	419088	419322	235	419174	17	3.07261	trChip_vs_input_peak_3995
scaffold_484	856057	856388	332	856174	17	3.07261	trChip_vs_input_peak_4543
scaffold_4945	1286	1520	235	1459	17	3.07261	trChip_vs_input_peak_4617
scaffold_500	501384	501658	275	501420	17	3.07261	trChip_vs_input_peak_4670
scaffold_52	505702	505936	235	505740	17	3.07261	trChip_vs_input_peak_4784
scaffold_69	563632	563915	284	563711	17	3.07261	trChip_vs_input_peak_5659
scaffold_822	271272	271569	298	271379	17	3.07261	trChip_vs_input_peak_6260
scaffold_840	132379	132642	264	132484	17	3.07261	trChip_vs_input_peak_6333
scaffold_85	203992	204256	265	204095	17	3.07261	trChip_vs_input_peak_6344
scaffold_85	2837356	2837731	376	2837579	17	3.07261	trChip_vs_input_peak_6361
scaffold_941	1164	1505	342	1353	17	3.07261	trChip_vs_input_peak_6627
scaffold_308	1268624	1268928	305	1268749	30	3.06653	trChip_vs_input_peak_3005
scaffold_357	1121191	1121676	486	1121568	30	3.06653	trChip_vs_input_peak_3471
scaffold_449	102616	102994	379	102797	30	3.06653	trChip_vs_input_peak_4293
scaffold_5	4170359	4170676	318	4170588	30	3.06653	trChip_vs_input_peak_4653
scaffold_576	104641	105172	532	104783	30	3.06653	trChip_vs_input_peak_5068
scaffold_59	2993096	2993373	278	2993258	30	3.06653	trChip_vs_input_peak_5157
scaffold_60	1574814	1575316	503	1575239	30	3.06653	trChip_vs_input_peak_5224
scaffold_662	69456	69741	286	69576	30	3.06653	trChip_vs_input_peak_5515
scaffold_7	5733395	5733785	391	5733572	30	3.06653	trChip_vs_input_peak_5748
scaffold_88	1956577	1957000	424	1956770	30	3.06653	trChip_vs_input_peak_6453

scaffold_90	2716251	2716517	267	2716450	30	3.06653	trChip_vs_input_peak_6511
scaffold_108	1021004	1021282	279	1021154	20	3.0652	trChip_vs_input_peak_257
scaffold_17	4844265	4844561	297	4844330	20	3.0652	trChip_vs_input_peak_1354
scaffold_2	3330128	3330382	255	3330182	20	3.0652	trChip_vs_input_peak_1703
scaffold_6	3593246	3593648	403	3593366	20	3.0652	trChip_vs_input_peak_5201
scaffold_58	537852	538143	292	537948	13	3.06497	trChip_vs_input_peak_5091
scaffold_70	1246780	1247014	235	1246809	13	3.06497	trChip_vs_input_peak_5754
scaffold_311	1256516	1256842	327	1256688	43	3.06405	trChip_vs_input_peak_3073
scaffold_117	245297	245585	289	245432	30	3.05918	trChip_vs_input_peak_481
scaffold_396	885029	885324	296	885146	12	3.0561	trChip_vs_input_peak_3834
scaffold_124	893507	893792	286	893614	16	3.05387	trChip_vs_input_peak_639
scaffold_58	1385974	1386252	279	1386187	16	3.05387	trChip_vs_input_peak_5094
scaffold_1094	100349	100613	265	100504	28	3.05203	trChip_vs_input_peak_308
scaffold_1179	99435	99715	281	99512	28	3.05203	trChip_vs_input_peak_499
scaffold_135	957339	957845	507	957762	28	3.05203	trChip_vs_input_peak_837
scaffold_311	379096	379461	366	379235	28	3.05203	trChip_vs_input_peak_3062
scaffold_361	1003981	1004294	314	1004126	28	3.05203	trChip_vs_input_peak_3503
scaffold_367	716579	716935	357	716767	28	3.05203	trChip_vs_input_peak_3542
scaffold_39	414269	414595	327	414456	28	3.05203	trChip_vs_input_peak_3782
scaffold_396	1061743	1062040	298	1061906	28	3.05203	trChip_vs_input_peak_3838
scaffold_466	530433	530919	487	530557	28	3.05203	trChip_vs_input_peak_4389
scaffold_545	75006	75779	774	75577	28	3.05203	trChip_vs_input_peak_4917
scaffold_586	437224	437485	262	437419	28	3.05203	trChip_vs_input_peak_5129
scaffold_72	2816352	2816803	452	2816667	28	3.05203	trChip_vs_input_peak_5837
scaffold_272	126354	126597	244	126430	26	3.05118	trChip_vs_input_peak_2559
scaffold_1	1667011	1667394	384	1667033	15	3.04708	trChip_vs_input_peak_11
scaffold_108	53563	53839	277	53639	15	3.04708	trChip_vs_input_peak_249
scaffold_134	343684	343963	280	343753	15	3.04708	trChip_vs_input_peak_806
scaffold_20	3523973	3524207	235	3524110	15	3.04708	trChip_vs_input_peak_1743
scaffold_2345	14612	14846	235	14746	15	3.04708	trChip_vs_input_peak_2142
scaffold_307	374862	375114	253	374972	15	3.04708	trChip_vs_input_peak_2995
scaffold_37	2262787	2263125	339	2263019	15	3.04708	trChip_vs_input_peak_3598
scaffold_455	559651	559885	235	559660	15	3.04708	trChip_vs_input_peak_4333
scaffold_692	217774	218197	424	217961	15	3.04708	trChip_vs_input_peak_5696
scaffold_805	93708	94063	356	93868	15	3.04708	trChip_vs_input_peak_6190
scaffold_837	203634	203938	305	203748	15	3.04708	trChip_vs_input_peak_6318
scaffold_92	570048	570393	346	570129	15	3.04708	trChip_vs_input_peak_6568
scaffold_3	6617078	6617367	290	6617206	19	3.04614	trChip_vs_input_peak_2901
scaffold_377	132303	132551	249	132426	19	3.04614	trChip_vs_input_peak_3670
scaffold_440	828001	828335	335	828291	39	3.04286	trChip_vs_input_peak_4246

scaffold_585	568992	569277	286	569147	22	3.04046	trChip_vs_input_peak_5124
scaffold_734	234116	234606	491	234507	22	3.04046	trChip_vs_input_peak_5886
scaffold_322	212234	212527	294	212503	14	3.03718	trChip_vs_input_peak_3152
scaffold_170	516113	516506	394	516340	25	3.0361	trChip_vs_input_peak_1363
scaffold_23	3622163	3622397	235	3622325	25	3.0361	trChip_vs_input_peak_2100
scaffold_144	1893082	1893369	288	1893245	12	3.03573	trChip_vs_input_peak_973
scaffold_1	7731630	7732098	469	7731683	26	3.03555	trChip_vs_input_peak_42
scaffold_246	854423	854733	311	854553	26	3.03555	trChip_vs_input_peak_2252
scaffold_27	2912463	2912699	237	2912575	26	3.03555	trChip_vs_input_peak_2539
scaffold_271	412283	412615	333	412449	26	3.03555	trChip_vs_input_peak_2553
scaffold_285	1167138	1167539	402	1167411	26	3.03555	trChip_vs_input_peak_2739
scaffold_322	63767	64128	362	63923	26	3.03555	trChip_vs_input_peak_3149
scaffold_333	330477	330903	427	330685	26	3.03555	trChip_vs_input_peak_3241
scaffold_363	530992	531287	296	531131	26	3.03555	trChip_vs_input_peak_3511
scaffold_388	39266	39673	408	39468	26	3.03555	trChip_vs_input_peak_3766
scaffold_39	873549	874015	467	873773	26	3.03555	trChip_vs_input_peak_3788
scaffold_390	599497	599742	246	599651	26	3.03555	trChip_vs_input_peak_3800
scaffold_392	583936	584372	437	584310	26	3.03555	trChip_vs_input_peak_3807
scaffold_414	258763	259010	248	258826	26	3.03555	trChip_vs_input_peak_4020
scaffold_427	156412	157026	615	156573	26	3.03555	trChip_vs_input_peak_4131
scaffold_44	138586	138991	406	138781	26	3.03555	trChip_vs_input_peak_4211
scaffold_456	140808	141199	392	140996	26	3.03555	trChip_vs_input_peak_4335
scaffold_459	931069	931303	235	931101	26	3.03555	trChip_vs_input_peak_4348
scaffold_512	532671	533017	347	532823	26	3.03555	trChip_vs_input_peak_4747
scaffold_535	250731	251160	430	251024	26	3.03555	trChip_vs_input_peak_4855
scaffold_545	579864	580162	299	580053	26	3.03555	trChip_vs_input_peak_4919
scaffold_580	585568	586179	612	585699	26	3.03555	trChip_vs_input_peak_5107
scaffold_627	115955	116278	324	116108	26	3.03555	trChip_vs_input_peak_5324
scaffold_636	566170	566484	315	566373	26	3.03555	trChip_vs_input_peak_5366
scaffold_65	410687	411044	358	410935	26	3.03555	trChip_vs_input_peak_5449
scaffold_673	99836	100097	262	99898	26	3.03555	trChip_vs_input_peak_5587
scaffold_68	2623756	2624324	569	2624257	26	3.03555	trChip_vs_input_peak_5626
scaffold_7	3335348	3335606	259	3335492	26	3.03555	trChip_vs_input_peak_5738
scaffold_866	100071	100738	668	100545	26	3.03555	trChip_vs_input_peak_6407
scaffold_931	171804	172318	515	171870	26	3.03555	trChip_vs_input_peak_6606
scaffold_954	74994	75412	419	75276	26	3.03555	trChip_vs_input_peak_6650
scaffold_954	264074	264701	628	264128	26	3.03555	trChip_vs_input_peak_6653
scaffold_94	450750	451006	257	450800	28	3.03265	trChip_vs_input_peak_6615
scaffold_188	1291765	1292573	809	1292369	37	3.03073	trChip_vs_input_peak_1572
scaffold_203	388521	388776	256	388647	37	3.03073	trChip_vs_input_peak_1777

scaffold_376	1002191	1002453	263	1002319	18	3.02535	trChip_vs_input_peak_3662
scaffold_83	2720937	2721199	263	2721171	18	3.02535	trChip_vs_input_peak_6299
scaffold_90	2935131	2935528	398	2935172	18	3.02535	trChip_vs_input_peak_6513
scaffold_1210	133	372	240	344	21	3.0223	trChip_vs_input_peak_581
scaffold_139	957602	957881	280	957745	21	3.0223	trChip_vs_input_peak_895
scaffold_262	65600	65952	353	65707	21	3.0223	trChip_vs_input_peak_2430
scaffold_376	682203	682463	261	682345	21	3.0223	trChip_vs_input_peak_3658
scaffold_400	1067421	1067827	407	1067599	21	3.0223	trChip_vs_input_peak_3919
scaffold_636	30535	30894	360	30711	21	3.0223	trChip_vs_input_peak_5363
scaffold_101	2214570	2215148	579	2214658	24	3.01998	trChip_vs_input_peak_96
scaffold_512	272219	272677	459	272596	27	3.01816	trChip_vs_input_peak_4742
scaffold_272	582266	582555	290	582323	35	3.01736	trChip_vs_input_peak_2562
scaffold_439	184113	184407	295	184307	35	3.01736	trChip_vs_input_peak_4203
scaffold_107	1712863	1713176	314	1712974	24	3.01666	trChip_vs_input_peak_230
scaffold_117	262112	263024	913	262170	24	3.01666	trChip_vs_input_peak_482
scaffold_1278	19072	19306	235	19198	24	3.01666	trChip_vs_input_peak_698
scaffold_16	1648787	1649177	391	1648880	24	3.01666	trChip_vs_input_peak_1224
scaffold_184	1535748	1536165	418	1535904	24	3.01666	trChip_vs_input_peak_1547
scaffold_188	1790181	1790535	355	1790392	24	3.01666	trChip_vs_input_peak_1576
scaffold_22	687215	688007	793	687665	24	3.01666	trChip_vs_input_peak_1939
scaffold_255	967898	968221	324	967936	24	3.01666	trChip_vs_input_peak_2359
scaffold_288	1189144	1189543	400	1189388	24	3.01666	trChip_vs_input_peak_2759
scaffold_31	1986625	1987068	444	1986853	24	3.01666	trChip_vs_input_peak_3030
scaffold_320	537772	538567	796	538439	24	3.01666	trChip_vs_input_peak_3134
scaffold_366	1123821	1124350	530	1124137	24	3.01666	trChip_vs_input_peak_3537
scaffold_37	1739089	1739612	524	1739274	24	3.01666	trChip_vs_input_peak_3579
scaffold_38	1311237	1311548	312	1311418	24	3.01666	trChip_vs_input_peak_3701
scaffold_4	6458341	6458675	335	6458490	24	3.01666	trChip_vs_input_peak_3892
scaffold_414	168283	168620	338	168505	24	3.01666	trChip_vs_input_peak_4019
scaffold_474	448080	448717	638	448243	24	3.01666	trChip_vs_input_peak_4456
scaffold_517	630966	631214	249	631125	24	3.01666	trChip_vs_input_peak_4777
scaffold_529	684270	684887	618	684399	24	3.01666	trChip_vs_input_peak_4821
scaffold_64	510285	510519	235	510449	24	3.01666	trChip_vs_input_peak_5379
scaffold_649	560111	560361	251	560197	24	3.01666	trChip_vs_input_peak_5444
scaffold_670	284219	284678	460	284445	24	3.01666	trChip_vs_input_peak_5563
scaffold_7	1874097	1874697	601	1874504	24	3.01666	trChip_vs_input_peak_5724
scaffold_717	122027	122364	338	122064	24	3.01666	trChip_vs_input_peak_5818
scaffold_85	2823045	2823543	499	2823094	24	3.01666	trChip_vs_input_peak_6360
scaffold_98	2113994	2114402	409	2114112	24	3.01666	trChip_vs_input_peak_6716
scaffold_174	1146073	1146434	362	1146347	13	3.01487	trChip_vs_input_peak_1419

scaffold_176	1424702	1425084	383	1424860	13	3.01487	trChip_vs_input_peak_1448
scaffold_186	25408	25689	282	25473	13	3.01487	trChip_vs_input_peak_1555
scaffold_25	1495962	1496325	364	1496303	13	3.01487	trChip_vs_input_peak_2295
scaffold_33	3122057	3122344	288	3122276	13	3.01487	trChip_vs_input_peak_3221
scaffold_148	88925	89290	366	89099	75	3.00502	trChip_vs_input_peak_1023
scaffold_439	15932	16362	431	16137	26	3.00275	trChip_vs_input_peak_4202
scaffold_130	1548218	1548520	303	1548438	23	3.00271	trChip_vs_input_peak_751
scaffold_322	1210877	1211174	298	1211128	23	3.00271	trChip_vs_input_peak_3158
scaffold_370	1078728	1079210	483	1079191	20	3.00265	trChip_vs_input_peak_3613
scaffold_74	2071723	2072016	294	2071762	20	3.00265	trChip_vs_input_peak_5912
scaffold_15	2561350	2561690	341	2561358	17	3.00258	trChip_vs_input_peak_1057
scaffold_239	408039	408273	235	408092	17	3.00258	trChip_vs_input_peak_2173
scaffold_175	753320	753878	559	753604	33	3.00255	trChip_vs_input_peak_1429
scaffold_462	131950	132333	384	132133	33	3.00255	trChip_vs_input_peak_4378
scaffold_485	898338	898601	264	898501	33	3.00255	trChip_vs_input_peak_4547
scaffold_492	441752	442012	261	441871	33	3.00255	trChip_vs_input_peak_4604
scaffold_529	614072	614548	477	614298	33	3.00255	trChip_vs_input_peak_4819
scaffold_91	678123	678476	354	678191	33	3.00255	trChip_vs_input_peak_6539
scaffold_108	623056	623492	437	623138	22	2.99478	trChip_vs_input_peak_252
scaffold_129	1249533	1249869	337	1249750	22	2.99478	trChip_vs_input_peak_717
scaffold_13	1997460	1997694	235	1997496	22	2.99478	trChip_vs_input_peak_731
scaffold_138	425978	426212	235	426047	22	2.99478	trChip_vs_input_peak_880
scaffold_14	3159365	3159817	453	3159670	22	2.99478	trChip_vs_input_peak_912
scaffold_22	2032571	2032943	373	2032736	22	2.99478	trChip_vs_input_peak_1952
scaffold_278	850099	850465	367	850305	22	2.99478	trChip_vs_input_peak_2612
scaffold_289	1158494	1158825	332	1158537	22	2.99478	trChip_vs_input_peak_2777
scaffold_328	485255	485491	237	485324	22	2.99478	trChip_vs_input_peak_3203
scaffold_33	3818299	3818551	253	3818380	22	2.99478	trChip_vs_input_peak_3227
scaffold_368	41859	42218	360	42052	22	2.99478	trChip_vs_input_peak_3551
scaffold_383	376085	376643	559	376548	22	2.99478	trChip_vs_input_peak_3749
scaffold_40	3657682	3657965	284	3657758	22	2.99478	trChip_vs_input_peak_3908
scaffold_419	264775	265019	245	264830	22	2.99478	trChip_vs_input_peak_4061
scaffold_506	189701	190091	391	189780	22	2.99478	trChip_vs_input_peak_4707
scaffold_617	373289	373529	241	373332	22	2.99478	trChip_vs_input_peak_5291
scaffold_629	617152	617616	465	617471	22	2.99478	trChip_vs_input_peak_5336
scaffold_35	3411309	3411703	395	3411589	25	2.98633	trChip_vs_input_peak_3412
scaffold_520	548485	548739	255	548656	25	2.98633	trChip_vs_input_peak_4797
scaffold_648	209584	209900	317	209709	25	2.98633	trChip_vs_input_peak_5425
scaffold_137	2098972	2099326	355	2099127	31	2.98607	trChip_vs_input_peak_870
scaffold_173	2006262	2006849	588	2006662	31	2.98607	trChip_vs_input_peak_1398

scaffold_262	505431	505822	392	505662	31	2.98607	trChip_vs_input_peak_2437
scaffold_366	235024	235415	392	235308	31	2.98607	trChip_vs_input_peak_3527
scaffold_402	514846	515144	299	515052	31	2.98607	trChip_vs_input_peak_3931
scaffold_525	524887	525137	251	525055	31	2.98607	trChip_vs_input_peak_4808
scaffold_54	574084	575314	1231	574371	31	2.98607	trChip_vs_input_peak_4874
scaffold_890	51831	52155	325	51961	31	2.98607	trChip_vs_input_peak_6478
scaffold_910	172335	172839	505	172668	31	2.98607	trChip_vs_input_peak_6549
scaffold_92	2243420	2243666	247	2243520	31	2.98607	trChip_vs_input_peak_6572
scaffold_112	2385573	2385863	291	2385728	22	2.98416	trChip_vs_input_peak_406
scaffold_36	3482949	3483227	279	3483073	22	2.98416	trChip_vs_input_peak_3494
scaffold_272	48318	48640	323	48455	19	2.98134	trChip_vs_input_peak_2558
scaffold_813	331822	332230	409	331924	19	2.98134	trChip_vs_input_peak_6219
scaffold_459	585730	585964	235	585746	16	2.97753	trChip_vs_input_peak_4345
scaffold_67	1439267	1439646	380	1439420	16	2.97753	trChip_vs_input_peak_5547
scaffold_155	764071	764422	352	764269	30	2.97538	trChip_vs_input_peak_1146
scaffold_112	1229492	1229838	347	1229803	11	2.97296	trChip_vs_input_peak_403
scaffold_247	727705	727968	264	727751	11	2.97296	trChip_vs_input_peak_2263
scaffold_692	272349	272710	362	272558	11	2.97296	trChip_vs_input_peak_5699
scaffold_789	199817	200193	377	200182	11	2.97296	trChip_vs_input_peak_6112
scaffold_189	1868590	1868911	322	1868865	16	2.97011	trChip_vs_input_peak_1590
scaffold_1022	134646	134994	349	134898	20	2.96914	trChip_vs_input_peak_130
scaffold_103	2578418	2578728	311	2578550	20	2.96914	trChip_vs_input_peak_147
scaffold_104	1200109	1200343	235	1200153	20	2.96914	trChip_vs_input_peak_155
scaffold_109	760372	760681	310	760649	20	2.96914	trChip_vs_input_peak_297
scaffold_13	3281975	3282209	235	3282178	20	2.96914	trChip_vs_input_peak_737
scaffold_1404	68493	68894	402	68714	20	2.96914	trChip_vs_input_peak_930
scaffold_1459	5510	5782	273	5568	20	2.96914	trChip_vs_input_peak_994
scaffold_163	1330252	1330574	323	1330411	20	2.96914	trChip_vs_input_peak_1271
scaffold_167	969991	970225	235	970131	20	2.96914	trChip_vs_input_peak_1309
scaffold_179	1467167	1467468	302	1467318	20	2.96914	trChip_vs_input_peak_1494
scaffold_196	273867	274128	262	274076	20	2.96914	trChip_vs_input_peak_1648
scaffold_2	7056271	7056512	242	7056349	20	2.96914	trChip_vs_input_peak_1723
scaffold_207	1142191	1142425	235	1142381	20	2.96914	trChip_vs_input_peak_1819
scaffold_229	848956	849190	235	849082	20	2.96914	trChip_vs_input_peak_2081
scaffold_263	89332	90080	749	89770	20	2.96914	trChip_vs_input_peak_2445
scaffold_28	2616509	2616947	439	2616736	20	2.96914	trChip_vs_input_peak_2655
scaffold_37	806367	806648	282	806466	20	2.96914	trChip_vs_input_peak_3572
scaffold_6	5333493	5333727	235	5333611	20	2.96914	trChip_vs_input_peak_5210
scaffold_60	249042	249404	363	249349	20	2.96914	trChip_vs_input_peak_5218
scaffold_60	3107764	3108455	692	3108158	20	2.96914	trChip_vs_input_peak_5232

scaffold_686	532002	532241	240	532047	20	2.96914	trChip_vs_input_peak_5646
scaffold_704	32517	32999	483	32960	20	2.96914	trChip_vs_input_peak_5775
scaffold_792	271971	272212	242	272186	20	2.96914	trChip_vs_input_peak_6132
scaffold_1	1269215	1269605	391	1269389	24	2.9688	trChip_vs_input_peak_9
scaffold_14	5388547	5389055	509	5388762	29	2.96761	trChip_vs_input_peak_919
scaffold_398	938142	938483	342	938333	29	2.96761	trChip_vs_input_peak_3857
scaffold_414	1049379	1049636	258	1049547	29	2.96761	trChip_vs_input_peak_4030
scaffold_435	978455	978981	527	978680	29	2.96761	trChip_vs_input_peak_4193
scaffold_65	3291277	3291585	309	3291372	29	2.96761	trChip_vs_input_peak_5462
scaffold_715	436765	437556	792	436876	29	2.96761	trChip_vs_input_peak_5812
scaffold_765	197100	197334	235	197251	18	2.95813	trChip_vs_input_peak_6014
scaffold_252	327284	327523	240	327458	26	2.95584	trChip_vs_input_peak_2345
scaffold_7	2698189	2698503	315	2698282	36	2.95097	trChip_vs_input_peak_5733
scaffold_7	3565789	3566467	679	3566399	36	2.95097	trChip_vs_input_peak_5740
scaffold_72	767288	767705	418	767574	36	2.95097	trChip_vs_input_peak_5832
scaffold_102	1426820	1427087	268	1426950	23	2.95004	trChip_vs_input_peak_121
scaffold_499	155085	155322	238	155170	23	2.95004	trChip_vs_input_peak_4634
scaffold_11	5326212	5326548	337	5326324	27	2.94679	trChip_vs_input_peak_349
scaffold_122	2237952	2238241	290	2238182	27	2.94679	trChip_vs_input_peak_604
scaffold_154	1066389	1066852	464	1066570	27	2.94679	trChip_vs_input_peak_1127
scaffold_159	522371	522677	307	522473	27	2.94679	trChip_vs_input_peak_1200
scaffold_186	1224840	1225281	442	1225019	27	2.94679	trChip_vs_input_peak_1559
scaffold_188	1225099	1225468	370	1225236	27	2.94679	trChip_vs_input_peak_1571
scaffold_2470	9584	10099	516	9958	27	2.94679	trChip_vs_input_peak_2269
scaffold_254	768688	769120	433	768978	27	2.94679	trChip_vs_input_peak_2355
scaffold_289	437568	437828	261	437666	27	2.94679	trChip_vs_input_peak_2767
scaffold_30	1292658	1292913	256	1292781	27	2.94679	trChip_vs_input_peak_2915
scaffold_315	516084	516357	274	516132	27	2.94679	trChip_vs_input_peak_3093
scaffold_38	2090284	2090654	371	2090437	27	2.94679	trChip_vs_input_peak_3707
scaffold_411	112749	113012	264	112837	27	2.94679	trChip_vs_input_peak_4004
scaffold_459	930440	931001	562	930792	27	2.94679	trChip_vs_input_peak_4347
scaffold_475	231516	231860	345	231730	27	2.94679	trChip_vs_input_peak_4470
scaffold_49	3223484	3223736	253	3223633	27	2.94679	trChip_vs_input_peak_4588
scaffold_546	656093	656339	247	656118	27	2.94679	trChip_vs_input_peak_4925
scaffold_580	280207	280732	526	280357	27	2.94679	trChip_vs_input_peak_5106
scaffold_683	467766	468291	526	468137	27	2.94679	trChip_vs_input_peak_5637
scaffold_77	1830148	1830692	545	1830325	27	2.94679	trChip_vs_input_peak_6031
scaffold_82	1937437	1937727	291	1937514	27	2.94679	trChip_vs_input_peak_6241
scaffold_977	146365	147041	677	146911	27	2.94679	trChip_vs_input_peak_6710
scaffold_60	1358599	1358833	235	1358751	20	2.94261	trChip_vs_input_peak_5220

scaffold_379	1065507	1065892	386	1065668	43	2.93973	trChip_vs_input_peak_3683
scaffold_1159	46072	46495	424	46441	18	2.93868	trChip_vs_input_peak_469
scaffold_134	1868877	1869111	235	1868883	18	2.93868	trChip_vs_input_peak_818
scaffold_136	853085	853431	347	853376	18	2.93868	trChip_vs_input_peak_854
scaffold_1662	21628	21930	303	21821	18	2.93868	trChip_vs_input_peak_1304
scaffold_185	1104987	1105244	258	1105016	18	2.93868	trChip_vs_input_peak_1551
scaffold_210	965042	965316	275	965132	18	2.93868	trChip_vs_input_peak_1857
scaffold_22	2043291	2043667	377	2043665	18	2.93868	trChip_vs_input_peak_1960
scaffold_284	1018483	1018756	274	1018631	18	2.93868	trChip_vs_input_peak_2720
scaffold_29	2209021	2209299	279	2209082	18	2.93868	trChip_vs_input_peak_2791
scaffold_3	226783	227056	274	226928	18	2.93868	trChip_vs_input_peak_2866
scaffold_30	1534628	1534911	284	1534738	18	2.93868	trChip_vs_input_peak_2919
scaffold_428	292016	292250	235	292029	18	2.93868	trChip_vs_input_peak_4148
scaffold_59	2835927	2836212	286	2836082	18	2.93868	trChip_vs_input_peak_5154
scaffold_76	2542360	2542629	270	2542552	18	2.93868	trChip_vs_input_peak_5977
scaffold_776	148013	148424	412	148087	18	2.93868	trChip_vs_input_peak_6066
scaffold_410	420330	421213	884	421106	34	2.93354	trChip_vs_input_peak_3996
scaffold_6	684087	684763	677	684189	34	2.93354	trChip_vs_input_peak_5194
scaffold_52	3150426	3150731	306	3150672	17	2.93276	trChip_vs_input_peak_4792
scaffold_109	183946	184255	310	184128	22	2.92991	trChip_vs_input_peak_289
scaffold_5	3779738	3780013	276	3779933	22	2.92991	trChip_vs_input_peak_4651
scaffold_73	756661	756895	235	756809	22	2.92991	trChip_vs_input_peak_5874
scaffold_110	795713	795950	238	795878	25	2.92313	trChip_vs_input_peak_358
scaffold_1175	65594	66060	467	65705	25	2.92313	trChip_vs_input_peak_496
scaffold_174	634729	634991	263	634842	25	2.92313	trChip_vs_input_peak_1412
scaffold_229	1588468	1588949	482	1588661	25	2.92313	trChip_vs_input_peak_2085
scaffold_30	5226	5520	295	5403	25	2.92313	trChip_vs_input_peak_2909
scaffold_30	1175970	1176445	476	1176228	25	2.92313	trChip_vs_input_peak_2914
scaffold_33	359211	359508	298	359296	25	2.92313	trChip_vs_input_peak_3212
scaffold_36	2178376	2178787	412	2178657	25	2.92313	trChip_vs_input_peak_3489
scaffold_367	470162	470430	269	470266	25	2.92313	trChip_vs_input_peak_3541
scaffold_403	477660	477921	262	477872	25	2.92313	trChip_vs_input_peak_3935
scaffold_427	162331	162615	285	162538	25	2.92313	trChip_vs_input_peak_4132
scaffold_474	692217	692880	664	692486	25	2.92313	trChip_vs_input_peak_4468
scaffold_49	2663472	2664429	958	2664123	25	2.92313	trChip_vs_input_peak_4585
scaffold_554	264603	264837	235	264810	25	2.92313	trChip_vs_input_peak_4962
scaffold_568	411899	412287	389	412083	25	2.92313	trChip_vs_input_peak_5042
scaffold_697	492067	492326	260	492173	25	2.92313	trChip_vs_input_peak_5711
scaffold_7	2692368	2692625	258	2692456	25	2.92313	trChip_vs_input_peak_5728
scaffold_761	262860	263189	330	263042	25	2.92313	trChip_vs_input_peak_6011

scaffold_864	120789	121069	281	120954	25	2.92313	trChip_vs_input_peak_6402
scaffold_891	298501	298735	235	298647	25	2.92313	trChip_vs_input_peak_6482
scaffold_904	150809	151046	238	150832	25	2.92313	trChip_vs_input_peak_6520
scaffold_905	257198	258054	857	257259	25	2.92313	trChip_vs_input_peak_6523
scaffold_937	149736	150177	442	149996	25	2.92313	trChip_vs_input_peak_6611
scaffold_98	819688	820125	438	820066	25	2.92313	trChip_vs_input_peak_6714
scaffold_282	591176	591429	254	591299	19	2.91924	trChip_vs_input_peak_2705
scaffold_781	128434	128668	235	128437	14	2.91909	trChip_vs_input_peak_6083
scaffold_125	2437456	2437989	534	2437789	32	2.91424	trChip_vs_input_peak_665
scaffold_127	2275257	2275498	242	2275349	32	2.91424	trChip_vs_input_peak_692
scaffold_169	1737232	1737596	365	1737409	32	2.91424	trChip_vs_input_peak_1328
scaffold_31	3312262	3312664	403	3312494	32	2.91424	trChip_vs_input_peak_3042
scaffold_396	948439	948688	250	948541	32	2.91424	trChip_vs_input_peak_3835
scaffold_49	3345413	3345979	567	3345693	32	2.91424	trChip_vs_input_peak_4592
scaffold_688	141269	141518	250	141424	32	2.91424	trChip_vs_input_peak_5652
scaffold_81	2172146	2172707	562	2172340	32	2.91424	trChip_vs_input_peak_6208
scaffold_9	3979199	3979436	238	3979263	32	2.91424	trChip_vs_input_peak_6496
scaffold_339	701539	702165	627	701681	26	2.91037	trChip_vs_input_peak_3301
scaffold_296	1294342	1294600	259	1294575	21	2.90826	trChip_vs_input_peak_2846
scaffold_43	2284215	2284461	247	2284376	21	2.90826	trChip_vs_input_peak_4167
scaffold_1310	129573	129884	312	129704	16	2.90191	trChip_vs_input_peak_772
scaffold_142	717867	718101	235	717893	16	2.90191	trChip_vs_input_peak_936
scaffold_205	958570	958804	235	958592	16	2.90191	trChip_vs_input_peak_1786
scaffold_239	416083	416356	274	416259	16	2.90191	trChip_vs_input_peak_2175
scaffold_337	408706	408940	235	408774	16	2.90191	trChip_vs_input_peak_3278
scaffold_339	616090	616333	244	616104	16	2.90191	trChip_vs_input_peak_3299
scaffold_401	653982	654307	326	654097	16	2.90191	trChip_vs_input_peak_3923
scaffold_45	2554220	2554498	279	2554471	16	2.90191	trChip_vs_input_peak_4310
scaffold_63	2875956	2876190	235	2876182	16	2.90191	trChip_vs_input_peak_5341
scaffold_880	271806	272112	307	272018	16	2.90191	trChip_vs_input_peak_6458
scaffold_1079	155466	155953	488	155674	23	2.89599	trChip_vs_input_peak_248
scaffold_113	624821	625100	280	625049	23	2.89599	trChip_vs_input_peak_422
scaffold_13	208661	208919	259	208888	23	2.89599	trChip_vs_input_peak_725
scaffold_152	161677	161997	321	161860	23	2.89599	trChip_vs_input_peak_1097
scaffold_16	3521208	3521885	678	3521423	23	2.89599	trChip_vs_input_peak_1230
scaffold_166	1704191	1704906	716	1704523	23	2.89599	trChip_vs_input_peak_1301
scaffold_177	1509786	1510032	247	1509877	23	2.89599	trChip_vs_input_peak_1462
scaffold_2	3329806	3330058	253	3329887	23	2.89599	trChip_vs_input_peak_1702
scaffold_220	1468530	1468776	247	1468598	23	2.89599	trChip_vs_input_peak_1993
scaffold_222	300623	300864	242	300796	23	2.89599	trChip_vs_input_peak_2006

scaffold_23	3063183	3063417	235	3063268	23	2.89599	trChip_vs_input_peak_2096
scaffold_246	214228	214492	265	214458	23	2.89599	trChip_vs_input_peak_2247
scaffold_28	45296	45795	500	45755	23	2.89599	trChip_vs_input_peak_2636
scaffold_298	944342	944611	270	944403	23	2.89599	trChip_vs_input_peak_2858
scaffold_306	317648	317929	282	317752	23	2.89599	trChip_vs_input_peak_2989
scaffold_5	2235765	2236102	338	2236046	23	2.89599	trChip_vs_input_peak_4646
scaffold_503	290832	291257	426	291081	23	2.89599	trChip_vs_input_peak_4686
scaffold_543	726574	726821	248	726641	23	2.89599	trChip_vs_input_peak_4909
scaffold_6	3647794	3648067	274	3647864	23	2.89599	trChip_vs_input_peak_5203
scaffold_64	797638	797968	331	797817	23	2.89599	trChip_vs_input_peak_5384
scaffold_696	498375	498670	296	498476	23	2.89599	trChip_vs_input_peak_5706
scaffold_75	414502	414740	239	414554	23	2.89599	trChip_vs_input_peak_5941
scaffold_85	480536	480803	268	480728	23	2.89599	trChip_vs_input_peak_6347
scaffold_91	2409020	2409601	582	2409340	23	2.89599	trChip_vs_input_peak_6546
scaffold_97	990653	991333	681	991242	23	2.89599	trChip_vs_input_peak_6694
scaffold_2	857069	857417	349	857297	18	2.89383	trChip_vs_input_peak_1689
scaffold_28	1581982	1582304	323	1582122	18	2.89383	trChip_vs_input_peak_2650
scaffold_119	1673094	1673567	474	1673319	30	2.89276	trChip_vs_input_peak_522
scaffold_177	1404613	1405381	769	1405351	30	2.89276	trChip_vs_input_peak_1460
scaffold_282	203637	203928	292	203791	30	2.89276	trChip_vs_input_peak_2700
scaffold_287	285885	286141	257	286077	30	2.89276	trChip_vs_input_peak_2747
scaffold_340	715329	715816	488	715508	30	2.89276	trChip_vs_input_peak_3339
scaffold_54	2699759	2700104	346	2699926	30	2.89276	trChip_vs_input_peak_4885
scaffold_104	670374	670649	276	670448	20	2.88492	trChip_vs_input_peak_154
scaffold_281	192537	192782	246	192705	20	2.88492	trChip_vs_input_peak_2681
scaffold_31	1136981	1137495	515	1137153	20	2.88492	trChip_vs_input_peak_3024
scaffold_414	815157	815502	346	815328	20	2.88492	trChip_vs_input_peak_4027
scaffold_282	1104083	1104329	247	1104139	15	2.87423	trChip_vs_input_peak_2708
scaffold_320	838604	838846	243	838785	15	2.87423	trChip_vs_input_peak_3135
scaffold_373	455412	455703	292	455507	24	2.87147	trChip_vs_input_peak_3635
scaffold_582	414611	414845	235	414665	24	2.87147	trChip_vs_input_peak_5118
scaffold_1	2423215	2423690	476	2423486	28	2.86869	trChip_vs_input_peak_14
scaffold_111	1751122	1752011	890	1751876	28	2.86869	trChip_vs_input_peak_380
scaffold_1161	102943	103197	255	103100	28	2.86869	trChip_vs_input_peak_478
scaffold_184	327904	328219	316	328003	28	2.86869	trChip_vs_input_peak_1541
scaffold_322	1140687	1141024	338	1140830	28	2.86869	trChip_vs_input_peak_3156
scaffold_59	2868684	2869003	320	2868879	28	2.86869	trChip_vs_input_peak_5155
scaffold_60	3166212	3166595	384	3166395	28	2.86869	trChip_vs_input_peak_5233
scaffold_728	312054	312331	278	312241	28	2.86869	trChip_vs_input_peak_5866
scaffold_129	1214928	1215162	235	1214988	17	2.86612	trChip_vs_input_peak_715

scaffold_106	801806	802102	297	801964	21	2.86457	trChip_vs_input_peak_206
scaffold_11	3039776	3040082	307	3039992	21	2.86457	trChip_vs_input_peak_328
scaffold_110	1937271	1937707	437	1937561	21	2.86457	trChip_vs_input_peak_362
scaffold_122	1512352	1512603	252	1512471	21	2.86457	trChip_vs_input_peak_601
scaffold_133	617157	617419	263	617222	21	2.86457	trChip_vs_input_peak_795
scaffold_164	1389965	1390328	364	1390064	21	2.86457	trChip_vs_input_peak_1278
scaffold_179	1994354	1994693	340	1994599	21	2.86457	trChip_vs_input_peak_1496
scaffold_202	620037	620548	512	620472	21	2.86457	trChip_vs_input_peak_1762
scaffold_22	1189678	1190102	425	1189887	21	2.86457	trChip_vs_input_peak_1943
scaffold_289	1386768	1387042	275	1386877	21	2.86457	trChip_vs_input_peak_2782
scaffold_298	187689	188213	525	187836	21	2.86457	trChip_vs_input_peak_2854
scaffold_331	1227546	1227780	235	1227686	21	2.86457	trChip_vs_input_peak_3235
scaffold_335	1059876	1060186	311	1059932	21	2.86457	trChip_vs_input_peak_3265
scaffold_51	3138805	3139089	285	3138908	21	2.86457	trChip_vs_input_peak_4732
scaffold_606	82546	82782	237	82618	21	2.86457	trChip_vs_input_peak_5250
scaffold_614	21982	22224	243	22083	21	2.86457	trChip_vs_input_peak_5274
scaffold_717	99278	99560	283	99475	21	2.86457	trChip_vs_input_peak_5817
scaffold_8	1193530	1193821	292	1193665	21	2.86457	trChip_vs_input_peak_6153
scaffold_87	2802800	2803087	288	2802982	21	2.86457	trChip_vs_input_peak_6424
scaffold_91	389157	389391	235	389231	21	2.86457	trChip_vs_input_peak_6535
scaffold_411	548946	549201	256	549191	19	2.85967	trChip_vs_input_peak_4007
scaffold_139	589002	589271	270	589074	14	2.85664	trChip_vs_input_peak_894
scaffold_2	955538	955772	235	955560	14	2.85664	trChip_vs_input_peak_1691
scaffold_25	1485720	1485954	235	1485840	14	2.85664	trChip_vs_input_peak_2294
scaffold_299	354214	354594	381	354225	14	2.85664	trChip_vs_input_peak_2860
scaffold_68	1510830	1511287	458	1510959	14	2.85664	trChip_vs_input_peak_5615
scaffold_823	108564	108798	235	108583	14	2.85664	trChip_vs_input_peak_6263
scaffold_36	3484097	3484373	277	3484152	21	2.85441	trChip_vs_input_peak_3495
scaffold_79	901752	902027	276	901869	21	2.85441	trChip_vs_input_peak_6117
scaffold_98	2276921	2277280	360	2277090	21	2.85441	trChip_vs_input_peak_6718
scaffold_213	719465	719794	330	719632	33	2.84973	trChip_vs_input_peak_1879
scaffold_66	3132803	3133196	394	3132964	33	2.84973	trChip_vs_input_peak_5503
scaffold_102	2024459	2024875	417	2024724	26	2.84155	trChip_vs_input_peak_124
scaffold_104	1684270	1684741	472	1684496	26	2.84155	trChip_vs_input_peak_159
scaffold_116	2548961	2549499	539	2549136	26	2.84155	trChip_vs_input_peak_475
scaffold_145	929933	930223	291	930135	26	2.84155	trChip_vs_input_peak_989
scaffold_146	1554666	1555146	481	1554863	26	2.84155	trChip_vs_input_peak_1006
scaffold_224	964818	965052	235	964892	26	2.84155	trChip_vs_input_peak_2030
scaffold_243	1197544	1197793	250	1197699	26	2.84155	trChip_vs_input_peak_2217
scaffold_294	1291109	1291490	382	1291351	26	2.84155	trChip_vs_input_peak_2827

scaffold_3	4296975	4297599	625	4297145	26	2.84155	trChip_vs_input_peak_2889
scaffold_474	599335	599848	514	599491	26	2.84155	trChip_vs_input_peak_4466
scaffold_60	3106951	3107337	387	3107049	26	2.84155	trChip_vs_input_peak_5231
scaffold_656	422189	422444	256	422294	26	2.84155	trChip_vs_input_peak_5484
scaffold_70	114264	114536	273	114386	26	2.84155	trChip_vs_input_peak_5751
scaffold_81	229576	229860	285	229590	26	2.84155	trChip_vs_input_peak_6204
scaffold_863	82085	82426	342	82336	26	2.84155	trChip_vs_input_peak_6399
scaffold_91	1546413	1546720	308	1546560	26	2.84155	trChip_vs_input_peak_6541
scaffold_217	1127512	1127747	236	1127738	14	2.84021	trChip_vs_input_peak_1910
scaffold_139	86862	87435	574	87042	38	2.83579	trChip_vs_input_peak_889
scaffold_87	1232948	1233335	388	1233254	16	2.83577	trChip_vs_input_peak_6417
scaffold_216	1577554	1577852	299	1577734	18	2.83227	trChip_vs_input_peak_1898
scaffold_22	4025561	4025970	410	4025908	18	2.83227	trChip_vs_input_peak_1976
scaffold_45	1085711	1085950	240	1085879	18	2.83227	trChip_vs_input_peak_4301
scaffold_566	45515	45929	415	45790	20	2.82945	trChip_vs_input_peak_5029
scaffold_110	2354947	2355208	262	2354968	19	2.82775	trChip_vs_input_peak_366
scaffold_139	193556	193802	247	193773	19	2.82775	trChip_vs_input_peak_892
scaffold_229	1526837	1527241	405	1527100	19	2.82775	trChip_vs_input_peak_2084
scaffold_317	1029482	1029752	271	1029541	19	2.82775	trChip_vs_input_peak_3105
scaffold_4	3786077	3786311	235	3786266	19	2.82775	trChip_vs_input_peak_3876
scaffold_404	878657	878996	340	878818	19	2.82775	trChip_vs_input_peak_3944
scaffold_44	1209682	1209962	281	1209952	19	2.82775	trChip_vs_input_peak_4220
scaffold_515	627167	627465	299	627299	19	2.82775	trChip_vs_input_peak_4762
scaffold_53	2513169	2513516	348	2513321	19	2.82775	trChip_vs_input_peak_4837
scaffold_586	408041	408317	277	408190	19	2.82775	trChip_vs_input_peak_5128
scaffold_118	196300	196545	246	196351	22	2.82712	trChip_vs_input_peak_503
scaffold_411	958185	958474	290	958380	22	2.82712	trChip_vs_input_peak_4013
scaffold_149	1725521	1725973	453	1725595	31	2.82593	trChip_vs_input_peak_1047
scaffold_70	2980169	2980411	243	2980266	31	2.82593	trChip_vs_input_peak_5765
scaffold_72	1307316	1307646	331	1307528	31	2.82593	trChip_vs_input_peak_5835
scaffold_109	114613	114849	237	114830	24	2.8107	trChip_vs_input_peak_288
scaffold_132	543556	543904	349	543743	24	2.8107	trChip_vs_input_peak_782
scaffold_15	2560790	2561066	277	2560904	24	2.8107	trChip_vs_input_peak_1056
scaffold_155	1559379	1559679	301	1559517	24	2.8107	trChip_vs_input_peak_1152
scaffold_2	7056666	7057142	477	7057079	24	2.8107	trChip_vs_input_peak_1724
scaffold_22	1911923	1912374	452	1911977	24	2.8107	trChip_vs_input_peak_1944
scaffold_265	193927	194238	312	194117	24	2.8107	trChip_vs_input_peak_2461
scaffold_276	687267	687501	235	687320	24	2.8107	trChip_vs_input_peak_2590
scaffold_29	4354459	4354748	290	4354546	24	2.8107	trChip_vs_input_peak_2801
scaffold_291	496797	497306	510	496829	24	2.8107	trChip_vs_input_peak_2807

scaffold_324	1221684	1222231	548	1221752	24	2.8107	trChip_vs_input_peak_3164
scaffold_43	3129318	3129659	342	3129503	24	2.8107	trChip_vs_input_peak_4169
scaffold_8	2226684	2226931	248	2226891	24	2.8107	trChip_vs_input_peak_6158
scaffold_83	1996296	1996666	371	1996355	24	2.8107	trChip_vs_input_peak_6294
scaffold_151	420216	420768	553	420670	21	2.80252	trChip_vs_input_peak_1082
scaffold_264	1353178	1353503	326	1353368	21	2.80252	trChip_vs_input_peak_2458
scaffold_298	828650	828901	252	828831	19	2.80248	trChip_vs_input_peak_2856
scaffold_286	253069	253339	271	253140	12	2.79952	trChip_vs_input_peak_2744
scaffold_95	2483394	2483666	273	2483487	12	2.79952	trChip_vs_input_peak_6636
scaffold_1357	42897	43135	239	43064	29	2.79944	trChip_vs_input_peak_852
scaffold_158	418027	418564	538	418332	29	2.79944	trChip_vs_input_peak_1182
scaffold_250	69281	69551	271	69419	29	2.79944	trChip_vs_input_peak_2304
scaffold_27	729751	730496	746	730315	29	2.79944	trChip_vs_input_peak_2511
scaffold_541	687843	688143	301	688072	29	2.79944	trChip_vs_input_peak_4903
scaffold_66	1854423	1854811	389	1854652	29	2.79944	trChip_vs_input_peak_5494
scaffold_760	272304	272559	256	272389	29	2.79944	trChip_vs_input_peak_6003
scaffold_16	1490030	1490368	339	1490258	34	2.79146	trChip_vs_input_peak_1221
scaffold_783	226773	227484	712	227020	34	2.79146	trChip_vs_input_peak_6096
scaffold_14	2003611	2003852	242	2003691	17	2.78401	trChip_vs_input_peak_904
scaffold_144	774981	775248	268	774994	17	2.78401	trChip_vs_input_peak_967
scaffold_155	1766719	1767030	312	1766811	17	2.78401	trChip_vs_input_peak_1155
scaffold_1768	53889	54199	311	54188	17	2.78401	trChip_vs_input_peak_1451
scaffold_277	76888	77161	274	76944	17	2.78401	trChip_vs_input_peak_2594
scaffold_509	226847	227097	251	226951	17	2.78401	trChip_vs_input_peak_4723
scaffold_53	2773633	2773923	291	2773755	17	2.78401	trChip_vs_input_peak_4842
scaffold_63	3323424	3323671	248	3323508	17	2.78401	trChip_vs_input_peak_5351
scaffold_633	180718	180958	241	180849	17	2.78401	trChip_vs_input_peak_5358
scaffold_813	264815	265097	283	265079	17	2.78401	trChip_vs_input_peak_6218
scaffold_948	134374	134681	308	134553	17	2.78401	trChip_vs_input_peak_6630
scaffold_107	192643	192881	239	192678	26	2.78198	trChip_vs_input_peak_223
scaffold_42	1157986	1158221	236	1158183	22	2.77838	trChip_vs_input_peak_4076
scaffold_10	4360272	4360641	370	4360459	22	2.77533	trChip_vs_input_peak_63
scaffold_100	213159	213397	239	213238	22	2.77533	trChip_vs_input_peak_71
scaffold_108	2684795	2685053	259	2684857	22	2.77533	trChip_vs_input_peak_267
scaffold_12	2477321	2477627	307	2477479	22	2.77533	trChip_vs_input_peak_544
scaffold_123	1897661	1898030	370	1897820	22	2.77533	trChip_vs_input_peak_625
scaffold_168	551261	551495	235	551416	22	2.77533	trChip_vs_input_peak_1320
scaffold_202	837777	838088	312	837905	22	2.77533	trChip_vs_input_peak_1769
scaffold_222	1493836	1494177	342	1493994	22	2.77533	trChip_vs_input_peak_2016
scaffold_227	793240	793501	262	793283	22	2.77533	trChip_vs_input_peak_2066

scaffold_24	4129195	4129586	392	4129356	22	2.77533	trChip_vs_input_peak_2185
scaffold_27	952171	952480	310	952456	22	2.77533	trChip_vs_input_peak_2513
scaffold_343	207544	207818	275	207605	22	2.77533	trChip_vs_input_peak_3354
scaffold_484	228402	228636	235	228565	22	2.77533	trChip_vs_input_peak_4541
scaffold_65	305182	305550	369	305358	22	2.77533	trChip_vs_input_peak_5446
scaffold_76	2615119	2615377	259	2615159	22	2.77533	trChip_vs_input_peak_5983
scaffold_777	176484	176737	254	176575	22	2.77533	trChip_vs_input_peak_6069
scaffold_91	485988	486338	351	486103	22	2.77533	trChip_vs_input_peak_6538
scaffold_30	2334493	2334746	254	2334546	16	2.76983	trChip_vs_input_peak_2939
scaffold_10	3415559	3415807	249	3415629	27	2.76977	trChip_vs_input_peak_57
scaffold_1759	6024	6267	244	6077	27	2.76977	trChip_vs_input_peak_1441
scaffold_226	1171923	1172171	249	1172047	27	2.76977	trChip_vs_input_peak_2056
scaffold_239	1335555	1335789	235	1335707	27	2.76977	trChip_vs_input_peak_2178
scaffold_3	7146239	7146617	379	7146460	27	2.76977	trChip_vs_input_peak_2905
scaffold_314	795777	796163	387	796118	27	2.76977	trChip_vs_input_peak_3086
scaffold_40	1574781	1575330	550	1575175	27	2.76977	trChip_vs_input_peak_3901
scaffold_65	1391082	1391601	520	1391254	27	2.76977	trChip_vs_input_peak_5455
scaffold_679	253125	253443	319	253274	27	2.76977	trChip_vs_input_peak_5606
scaffold_689	126200	126725	526	126545	27	2.76977	trChip_vs_input_peak_5653
scaffold_8	5715695	5716096	402	5715752	27	2.76977	trChip_vs_input_peak_6172
scaffold_85	1438993	1439455	463	1439345	27	2.76977	trChip_vs_input_peak_6351
scaffold_931	109352	109586	235	109552	27	2.76977	trChip_vs_input_peak_6605
scaffold_1141	43433	43667	235	43532	32	2.76591	trChip_vs_input_peak_448
scaffold_246	788434	788851	418	788578	32	2.76591	trChip_vs_input_peak_2251
scaffold_414	300208	300692	485	300576	32	2.76591	trChip_vs_input_peak_4021
scaffold_106	1949165	1949582	418	1949546	29	2.76575	trChip_vs_input_peak_209
scaffold_154	172908	173302	395	173277	21	2.75248	trChip_vs_input_peak_1113
scaffold_257	425743	426002	260	425791	21	2.75248	trChip_vs_input_peak_2379
scaffold_1	7732289	7732581	293	7732561	19	2.74754	trChip_vs_input_peak_43
scaffold_209	1577340	1577574	235	1577385	19	2.74754	trChip_vs_input_peak_1835
scaffold_22	3536070	3536324	255	3536256	40	2.7393	trChip_vs_input_peak_1971
scaffold_395	273145	273870	726	273647	35	2.73858	trChip_vs_input_peak_3822
scaffold_159	1430400	1430646	247	1430568	30	2.73762	trChip_vs_input_peak_1206
scaffold_1755	40	416	377	177	30	2.73762	trChip_vs_input_peak_1439
scaffold_38	163621	163954	334	163832	30	2.73762	trChip_vs_input_peak_3684
scaffold_380	581829	582223	395	581997	30	2.73762	trChip_vs_input_peak_3727
scaffold_44	1260172	1260425	254	1260224	30	2.73762	trChip_vs_input_peak_4221
scaffold_475	747232	747515	284	747328	30	2.73762	trChip_vs_input_peak_4484
scaffold_652	500492	500885	394	500702	30	2.73762	trChip_vs_input_peak_5473
scaffold_118	1544010	1544291	282	1544026	25	2.73631	trChip_vs_input_peak_509

scaffold_1212	84993	85279	287	85080	25	2.73631	trChip_vs_input_peak_585
scaffold_306	1309930	1310395	466	1310070	25	2.73631	trChip_vs_input_peak_2993
scaffold_416	440800	441277	478	441089	25	2.73631	trChip_vs_input_peak_4039
scaffold_571	2866	3156	291	3064	25	2.73631	trChip_vs_input_peak_5054
scaffold_61	3347900	3348181	282	3348020	25	2.73631	trChip_vs_input_peak_5267
scaffold_64	796729	797322	594	797036	25	2.73631	trChip_vs_input_peak_5383
scaffold_105	2611220	2611587	368	2611355	20	2.73436	trChip_vs_input_peak_184
scaffold_1087	134121	134384	264	134189	20	2.73436	trChip_vs_input_peak_283
scaffold_11	2241932	2242413	482	2242014	20	2.73436	trChip_vs_input_peak_327
scaffold_111	581292	581697	406	581635	20	2.73436	trChip_vs_input_peak_376
scaffold_126	1964522	1964795	274	1964579	20	2.73436	trChip_vs_input_peak_675
scaffold_173	11016	11250	235	11051	20	2.73436	trChip_vs_input_peak_1383
scaffold_209	1732830	1733096	267	1733039	20	2.73436	trChip_vs_input_peak_1837
scaffold_225	581681	582037	357	581761	20	2.73436	trChip_vs_input_peak_2038
scaffold_23	4324924	4325260	337	4325201	20	2.73436	trChip_vs_input_peak_2105
scaffold_3	3209790	3210098	309	3210001	20	2.73436	trChip_vs_input_peak_2882
scaffold_321	788560	788794	235	788727	20	2.73436	trChip_vs_input_peak_3142
scaffold_367	877873	878162	290	877980	20	2.73436	trChip_vs_input_peak_3549
scaffold_48	1990765	1991046	282	1990947	20	2.73436	trChip_vs_input_peak_4518
scaffold_559	627003	627379	377	627184	20	2.73436	trChip_vs_input_peak_4974
scaffold_582	415420	415818	399	415789	20	2.73436	trChip_vs_input_peak_5119
scaffold_69	1242320	1242577	258	1242461	20	2.73436	trChip_vs_input_peak_5672
scaffold_70	40169	40695	527	40603	20	2.73436	trChip_vs_input_peak_5749
scaffold_710	488754	489160	407	488983	20	2.73436	trChip_vs_input_peak_5805
scaffold_722	284857	285244	388	285016	20	2.73436	trChip_vs_input_peak_5849
scaffold_80	3051	3484	434	3273	20	2.73436	trChip_vs_input_peak_6173
scaffold_845	76183	76558	376	76198	20	2.73436	trChip_vs_input_peak_6337
scaffold_97	1023726	1024320	595	1024112	20	2.73436	trChip_vs_input_peak_6696
scaffold_213	1069716	1069975	260	1069828	22	2.7313	trChip_vs_input_peak_1882
scaffold_237	1228780	1229224	445	1228844	15	2.73121	trChip_vs_input_peak_2162
scaffold_277	859714	860025	312	859799	15	2.73121	trChip_vs_input_peak_2604
scaffold_28	19145	19439	295	19435	15	2.73121	trChip_vs_input_peak_2635
scaffold_995	88967	89289	323	89085	15	2.73121	trChip_vs_input_peak_6747
scaffold_35	2131110	2131405	296	2131231	20	2.72467	trChip_vs_input_peak_3408
scaffold_699	108367	108611	245	108582	25	2.71893	trChip_vs_input_peak_5713
scaffold_262	1010317	1010567	251	1010503	18	2.71669	trChip_vs_input_peak_2440
scaffold_55	1520984	1521642	659	1521306	38	2.71586	trChip_vs_input_peak_4943
scaffold_103	1690792	1691106	315	1690958	33	2.7117	trChip_vs_input_peak_142
scaffold_269	14742	15007	266	14899	33	2.7117	trChip_vs_input_peak_2500
scaffold_710	520647	520928	282	520843	33	2.7117	trChip_vs_input_peak_5806

scaffold_189	1171927	1172239	313	1172073	28	2.70613	trChip_vs_input_peak_1585
scaffold_202	655911	656523	613	656248	28	2.70613	trChip_vs_input_peak_1764
scaffold_24	4252721	4253130	410	4252807	28	2.70613	trChip_vs_input_peak_2186
scaffold_285	924298	924995	698	924961	28	2.70613	trChip_vs_input_peak_2737
scaffold_38	3049445	3049849	405	3049547	28	2.70613	trChip_vs_input_peak_3718
scaffold_47	1564159	1564421	263	1564329	28	2.70613	trChip_vs_input_peak_4414
scaffold_7	5140179	5140750	572	5140410	28	2.70613	trChip_vs_input_peak_5742
scaffold_78	2984430	2985038	609	2984691	28	2.70613	trChip_vs_input_peak_6078
scaffold_86	2682053	2682467	415	2682284	28	2.70613	trChip_vs_input_peak_6389
scaffold_99	767303	767639	337	767530	28	2.70613	trChip_vs_input_peak_6733
scaffold_1	5149843	5150077	235	5149937	23	2.69827	trChip_vs_input_peak_24
scaffold_1	5964734	5965045	312	5964943	23	2.69827	trChip_vs_input_peak_29
scaffold_123	2454010	2454252	243	2454143	23	2.69827	trChip_vs_input_peak_629
scaffold_1275	80936	81174	239	81049	23	2.69827	trChip_vs_input_peak_697
scaffold_153	1259628	1260948	1321	1260086	23	2.69827	trChip_vs_input_peak_1106
scaffold_1563	48668	49043	376	48863	23	2.69827	trChip_vs_input_peak_1174
scaffold_157	1906358	1906843	486	1906468	23	2.69827	trChip_vs_input_peak_1179
scaffold_162	2131854	2132289	436	2131994	23	2.69827	trChip_vs_input_peak_1257
scaffold_1655	7176	7410	235	7211	23	2.69827	trChip_vs_input_peak_1293
scaffold_2083	6619	6876	258	6839	23	2.69827	trChip_vs_input_peak_1828
scaffold_239	528937	529272	336	529036	23	2.69827	trChip_vs_input_peak_2176
scaffold_271	1089157	1089405	249	1089257	23	2.69827	trChip_vs_input_peak_2556
scaffold_317	933883	934121	239	933922	23	2.69827	trChip_vs_input_peak_3104
scaffold_560	579837	580102	266	579962	23	2.69827	trChip_vs_input_peak_5004
scaffold_596	504910	505188	279	504967	23	2.69827	trChip_vs_input_peak_5173
scaffold_6	1613403	1613651	249	1613466	23	2.69827	trChip_vs_input_peak_5196
scaffold_64	3093263	3093509	247	3093330	23	2.69827	trChip_vs_input_peak_5395
scaffold_68	2496525	2497071	547	2496571	23	2.69827	trChip_vs_input_peak_5624
scaffold_719	248840	249402	563	249131	23	2.69827	trChip_vs_input_peak_5824
scaffold_92	2735257	2735735	479	2735701	23	2.69827	trChip_vs_input_peak_6577
scaffold_1	944382	944742	361	944499	24	2.69479	trChip_vs_input_peak_4
scaffold_105	1157652	1157886	235	1157736	24	2.69479	trChip_vs_input_peak_169
scaffold_553	500241	500555	315	500499	36	2.69036	trChip_vs_input_peak_4960
scaffold_10	3811270	3811615	346	3811495	18	2.68636	trChip_vs_input_peak_61
scaffold_110	287543	287777	235	287687	18	2.68636	trChip_vs_input_peak_354
scaffold_1143	54801	55179	379	54826	18	2.68636	trChip_vs_input_peak_451
scaffold_16	1542894	1543447	554	1543252	18	2.68636	trChip_vs_input_peak_1222
scaffold_207	548321	548591	271	548479	18	2.68636	trChip_vs_input_peak_1813
scaffold_33	739989	740259	271	740043	18	2.68636	trChip_vs_input_peak_3213
scaffold_411	709685	709951	267	709844	18	2.68636	trChip_vs_input_peak_4011

scaffold_629	388833	389297	465	388846	18	2.68636	trChip_vs_input_peak_5335
scaffold_8	5639055	5639305	251	5639220	18	2.68636	trChip_vs_input_peak_6171
scaffold_859	178215	178537	323	178246	18	2.68636	trChip_vs_input_peak_6383
scaffold_503	289943	290389	447	290263	22	2.68578	trChip_vs_input_peak_4685
scaffold_194	819418	820116	699	819552	31	2.6821	trChip_vs_input_peak_1638
scaffold_22	1187701	1188155	455	1187961	31	2.6821	trChip_vs_input_peak_1942
scaffold_3658	9031	9322	292	9115	31	2.6821	trChip_vs_input_peak_3526
scaffold_91	1742127	1742431	305	1742207	31	2.6821	trChip_vs_input_peak_6543
scaffold_179	1903377	1903611	235	1903422	20	2.67513	trChip_vs_input_peak_1495
scaffold_366	488429	488889	461	488706	20	2.67513	trChip_vs_input_peak_3528
scaffold_1	4556523	4556920	398	4556719	26	2.67085	trChip_vs_input_peak_21
scaffold_123	681798	682032	235	681915	26	2.67085	trChip_vs_input_peak_619
scaffold_134	1650852	1651450	599	1651315	26	2.67085	trChip_vs_input_peak_817
scaffold_17	4844932	4845439	508	4845211	26	2.67085	trChip_vs_input_peak_1355
scaffold_34	3374919	3375512	594	3375334	26	2.67085	trChip_vs_input_peak_3327
scaffold_344	611306	611696	391	611526	26	2.67085	trChip_vs_input_peak_3361
scaffold_37	3840927	3841662	736	3840981	26	2.67085	trChip_vs_input_peak_3608
scaffold_382	833296	833634	339	833521	26	2.67085	trChip_vs_input_peak_3743
scaffold_4	3784993	3785408	416	3785195	26	2.67085	trChip_vs_input_peak_3875
scaffold_70	2213041	2213472	432	2213230	26	2.67085	trChip_vs_input_peak_5759
scaffold_8	4876479	4876732	254	4876600	26	2.67085	trChip_vs_input_peak_6165
scaffold_560	495872	496106	235	495981	23	2.66911	trChip_vs_input_peak_5003
scaffold_96	1981213	1981560	348	1981522	15	2.66896	trChip_vs_input_peak_6676
scaffold_750	400965	401221	257	401170	21	2.65758	trChip_vs_input_peak_5948
scaffold_12	3671024	3671276	253	3671225	21	2.65466	trChip_vs_input_peak_550
scaffold_1278	21842	22083	242	21853	21	2.65466	trChip_vs_input_peak_699
scaffold_137	2310013	2310439	427	2310221	21	2.65466	trChip_vs_input_peak_871
scaffold_137	2375718	2375964	247	2375940	21	2.65466	trChip_vs_input_peak_873
scaffold_181	352428	352778	351	352550	21	2.65466	trChip_vs_input_peak_1527
scaffold_20	839045	839286	242	839185	21	2.65466	trChip_vs_input_peak_1728
scaffold_221	648717	649065	349	648729	21	2.65466	trChip_vs_input_peak_2000
scaffold_27	1411464	1411747	284	1411525	21	2.65466	trChip_vs_input_peak_2518
scaffold_296	447534	447791	258	447730	21	2.65466	trChip_vs_input_peak_2843
scaffold_305	884529	884887	359	884831	21	2.65466	trChip_vs_input_peak_2984
scaffold_381	467840	468097	258	467999	21	2.65466	trChip_vs_input_peak_3737
scaffold_4067	7884	8462	579	8028	21	2.65466	trChip_vs_input_peak_3951
scaffold_42	2571436	2571849	414	2571459	21	2.65466	trChip_vs_input_peak_4089
scaffold_470	711471	711956	486	711636	21	2.65466	trChip_vs_input_peak_4432
scaffold_807	254170	254464	295	254373	21	2.65466	trChip_vs_input_peak_6199
scaffold_196	1468989	1469399	411	1469192	29	2.64931	trChip_vs_input_peak_1650

scaffold_203	682617	682938	322	682832	29	2.64931	trChip_vs_input_peak_1779
scaffold_222	1034666	1034900	235	1034712	29	2.64931	trChip_vs_input_peak_2014
scaffold_50	994523	994763	241	994620	29	2.64931	trChip_vs_input_peak_4659
scaffold_145	315809	316217	409	316040	32	2.63195	trChip_vs_input_peak_977
scaffold_198	1339252	1339761	510	1339529	32	2.63195	trChip_vs_input_peak_1672
scaffold_274	841111	841358	248	841157	32	2.63195	trChip_vs_input_peak_2580
scaffold_635	142776	143013	238	142906	32	2.63195	trChip_vs_input_peak_5360
scaffold_108	1402841	1403328	488	1403250	24	2.63106	trChip_vs_input_peak_260
scaffold_202	504250	504713	464	504305	24	2.63106	trChip_vs_input_peak_1759
scaffold_249	1624887	1625121	235	1625011	24	2.63106	trChip_vs_input_peak_2287
scaffold_278	237089	237340	252	237301	24	2.63106	trChip_vs_input_peak_2608
scaffold_380	708557	709007	451	708870	24	2.63106	trChip_vs_input_peak_3730
scaffold_381	977861	978155	295	977923	24	2.63106	trChip_vs_input_peak_3740
scaffold_50	1395504	1395778	275	1395722	24	2.63106	trChip_vs_input_peak_4661
scaffold_77	3043672	3044060	389	3043781	24	2.63106	trChip_vs_input_peak_6046
scaffold_85	2298864	2299382	519	2299093	24	2.63106	trChip_vs_input_peak_6356
scaffold_143	171846	172227	382	172134	16	2.62935	trChip_vs_input_peak_948
scaffold_22	2746620	2746987	368	2746826	16	2.62935	trChip_vs_input_peak_1966
scaffold_587	45075	45349	275	45135	16	2.62935	trChip_vs_input_peak_5135
scaffold_75	46872	47153	282	46874	16	2.62935	trChip_vs_input_peak_5936
scaffold_84	1524059	1524434	376	1524210	16	2.62935	trChip_vs_input_peak_6326
scaffold_90	2045536	2045826	291	2045665	16	2.62935	trChip_vs_input_peak_6504
scaffold_15	1753043	1753465	423	1753193	27	2.61281	trChip_vs_input_peak_1055
scaffold_501	827201	827448	248	827338	27	2.61281	trChip_vs_input_peak_4678
scaffold_890	51365	51694	330	51563	27	2.61281	trChip_vs_input_peak_6477
scaffold_140	1093417	1093718	302	1093679	19	2.60415	trChip_vs_input_peak_927
scaffold_154	1213832	1214208	377	1214178	19	2.60415	trChip_vs_input_peak_1130
scaffold_16	315461	315751	291	315741	19	2.60415	trChip_vs_input_peak_1213
scaffold_22	2036922	2037156	235	2036938	19	2.60415	trChip_vs_input_peak_1955
scaffold_314	1057899	1058317	419	1057904	19	2.60415	trChip_vs_input_peak_3088
scaffold_3939	872	1292	421	1071	19	2.60415	trChip_vs_input_peak_3819
scaffold_407	286268	286558	291	286276	19	2.60415	trChip_vs_input_peak_3954
scaffold_411	616647	616914	268	616862	19	2.60415	trChip_vs_input_peak_4009
scaffold_529	348057	348372	316	348255	19	2.60415	trChip_vs_input_peak_4818
scaffold_555	684869	685103	235	684987	19	2.60415	trChip_vs_input_peak_4966
scaffold_1275	73735	74176	442	73947	30	2.59828	trChip_vs_input_peak_696
scaffold_614	530475	530792	318	530614	30	2.59828	trChip_vs_input_peak_5280
scaffold_64	238762	239515	754	238964	30	2.59828	trChip_vs_input_peak_5376
scaffold_722	282602	282937	336	282891	19	2.59492	trChip_vs_input_peak_5848
scaffold_92	1287487	1287818	332	1287700	33	2.58643	trChip_vs_input_peak_6570

scaffold_144	505085	505385	301	505202	22	2.58584	trChip_vs_input_peak_965
scaffold_180	1098653	1098887	235	1098852	22	2.58584	trChip_vs_input_peak_1518
scaffold_26	203557	203915	359	203778	22	2.58584	trChip_vs_input_peak_2397
scaffold_283	763344	763632	289	763484	22	2.58584	trChip_vs_input_peak_2713
scaffold_57	1886816	1887074	259	1886826	22	2.58584	trChip_vs_input_peak_5050
scaffold_820	346170	346627	458	346577	22	2.58584	trChip_vs_input_peak_6253
scaffold_121	787438	787672	235	787520	25	2.57193	trChip_vs_input_peak_577
scaffold_159	175217	175636	420	175565	25	2.57193	trChip_vs_input_peak_1196
scaffold_163	710780	711021	242	710855	25	2.57193	trChip_vs_input_peak_1267
scaffold_175	1206031	1206718	688	1206466	25	2.57193	trChip_vs_input_peak_1432
scaffold_179	613758	614001	244	613836	25	2.57193	trChip_vs_input_peak_1485
scaffold_203	294993	295227	235	295215	25	2.57193	trChip_vs_input_peak_1775
scaffold_363	63750	64253	504	63807	25	2.57193	trChip_vs_input_peak_3505
scaffold_396	863882	864226	345	864083	25	2.57193	trChip_vs_input_peak_3832
scaffold_45	1689010	1689475	466	1689368	25	2.57193	trChip_vs_input_peak_4305
scaffold_489	495954	496203	250	496010	25	2.57193	trChip_vs_input_peak_4563
scaffold_5	3019259	3019645	387	3019446	25	2.57193	trChip_vs_input_peak_4650
scaffold_512	263216	263513	298	263367	25	2.57193	trChip_vs_input_peak_4740
scaffold_109	1131537	1131788	252	1131641	28	2.561	trChip_vs_input_peak_300
scaffold_155	1979064	1979365	302	1979140	28	2.561	trChip_vs_input_peak_1162
scaffold_31	1314364	1314870	507	1314685	28	2.561	trChip_vs_input_peak_3025
scaffold_68	108436	108846	411	108598	28	2.561	trChip_vs_input_peak_5609
scaffold_73	676605	676883	279	676836	28	2.561	trChip_vs_input_peak_5872
scaffold_73	734769	735302	534	735100	28	2.561	trChip_vs_input_peak_5873
scaffold_86	1968526	1968778	253	1968619	28	2.561	trChip_vs_input_peak_6386
scaffold_130	1521863	1522100	238	1522011	31	2.55219	trChip_vs_input_peak_749
scaffold_139	2287948	2288473	526	2288120	31	2.55219	trChip_vs_input_peak_897
scaffold_287	1081934	1082399	466	1082375	31	2.55219	trChip_vs_input_peak_2755
scaffold_123	1884208	1884456	249	1884211	17	2.54498	trChip_vs_input_peak_624
scaffold_38	1302586	1303114	529	1302804	17	2.54498	trChip_vs_input_peak_3700
scaffold_391	691919	692153	235	692046	17	2.54498	trChip_vs_input_peak_3803
scaffold_420	196034	196294	261	196091	17	2.54498	trChip_vs_input_peak_4092
scaffold_13	907746	908057	312	907762	20	2.53399	trChip_vs_input_peak_729
scaffold_153	1257864	1258130	267	1258021	20	2.53399	trChip_vs_input_peak_1105
scaffold_26	3184067	3184554	488	3184371	20	2.53399	trChip_vs_input_peak_2408
scaffold_281	412344	412849	506	412427	20	2.53399	trChip_vs_input_peak_2683
scaffold_309	343335	343664	330	343454	20	2.53399	trChip_vs_input_peak_3008
scaffold_337	561774	562154	381	561946	20	2.53399	trChip_vs_input_peak_3279
scaffold_460	909347	909628	282	909477	20	2.53399	trChip_vs_input_peak_4366
scaffold_528	826342	826586	245	826377	20	2.53399	trChip_vs_input_peak_4816

scaffold_7	1135083	1135321	239	1135306	20	2.53399	trChip_vs_input_peak_5723
scaffold_965	208054	208338	285	208194	20	2.53399	trChip_vs_input_peak_6684
scaffold_14	2130106	2130755	650	2130669	23	2.52582	trChip_vs_input_peak_905
scaffold_203	348289	348682	394	348476	23	2.52582	trChip_vs_input_peak_1776
scaffold_244	478185	478419	235	478223	23	2.52582	trChip_vs_input_peak_2224
scaffold_313	740541	741158	618	740672	23	2.52582	trChip_vs_input_peak_3079
scaffold_335	1024772	1025053	282	1024822	23	2.52582	trChip_vs_input_peak_3263
scaffold_628	259321	259762	442	259622	23	2.52582	trChip_vs_input_peak_5330
scaffold_656	264175	264727	553	264336	23	2.52582	trChip_vs_input_peak_5480
scaffold_1	1265739	1266034	296	1265865	26	2.5195	trChip_vs_input_peak_6
scaffold_103	658022	658303	282	658169	26	2.5195	trChip_vs_input_peak_140
scaffold_130	1146948	1147337	390	1147106	26	2.5195	trChip_vs_input_peak_746
scaffold_396	1010673	1010996	324	1010824	26	2.5195	trChip_vs_input_peak_3837
scaffold_718	217360	217809	450	217680	26	2.5195	trChip_vs_input_peak_5823
scaffold_155	1962005	1962344	340	1962032	29	2.51447	trChip_vs_input_peak_1160
scaffold_175	189632	189896	265	189781	29	2.51447	trChip_vs_input_peak_1427
scaffold_208	299172	299420	249	299327	29	2.51447	trChip_vs_input_peak_1823
scaffold_402	515620	515927	308	515771	29	2.51447	trChip_vs_input_peak_3932
scaffold_41	1200373	1200796	424	1200717	29	2.51447	trChip_vs_input_peak_3973
scaffold_250	82922	83393	472	83061	32	2.51036	trChip_vs_input_peak_2305
scaffold_90	2936331	2937023	693	2936845	38	2.50407	trChip_vs_input_peak_6514
scaffold_106	2099652	2099886	235	2099827	24	2.50232	trChip_vs_input_peak_213
scaffold_2372	11369	11603	235	11569	18	2.47395	trChip_vs_input_peak_2164
scaffold_431	492899	493349	451	493235	18	2.47395	trChip_vs_input_peak_4179
scaffold_44	2410095	2410363	269	2410096	18	2.47395	trChip_vs_input_peak_4232
scaffold_109	742908	743376	469	743003	21	2.47341	trChip_vs_input_peak_296
scaffold_284	1421353	1421595	243	1421469	21	2.47341	trChip_vs_input_peak_2727
scaffold_37	2123437	2123825	389	2123558	21	2.47341	trChip_vs_input_peak_3594
scaffold_44	1778599	1779079	481	1778606	21	2.47341	trChip_vs_input_peak_4227
scaffold_649	516057	516369	313	516085	21	2.47341	trChip_vs_input_peak_5442
scaffold_691	207287	207521	235	207503	21	2.47341	trChip_vs_input_peak_5692
scaffold_267	1207817	1208058	242	1207932	24	2.47301	trChip_vs_input_peak_2488
scaffold_397	44400	44704	305	44700	24	2.47301	trChip_vs_input_peak_3839
scaffold_44	1631018	1631608	591	1631124	24	2.47301	trChip_vs_input_peak_4226
scaffold_515	269047	269322	276	269132	24	2.47301	trChip_vs_input_peak_4750
scaffold_90	2044798	2045120	323	2044964	24	2.47301	trChip_vs_input_peak_6503
scaffold_1458	18260	18512	253	18484	27	2.47269	trChip_vs_input_peak_992
scaffold_2	6423810	6424182	373	6423951	27	2.47269	trChip_vs_input_peak_1718
scaffold_366	1117039	1117298	260	1117102	27	2.47269	trChip_vs_input_peak_3535
scaffold_455	12311	12575	265	12384	27	2.47269	trChip_vs_input_peak_4332

scaffold_5	2976661	2977141	481	2976991	27	2.47269	trChip_vs_input_peak_4649
scaffold_545	584509	585136	628	584692	27	2.47269	trChip_vs_input_peak_4920
scaffold_56	1935517	1935857	341	1935730	27	2.47269	trChip_vs_input_peak_4979
scaffold_69	1063009	1063282	274	1063049	27	2.47269	trChip_vs_input_peak_5669
scaffold_845	321502	321796	295	321524	27	2.47269	trChip_vs_input_peak_6338
scaffold_112	492099	492514	416	492191	30	2.47244	trChip_vs_input_peak_401
scaffold_7	183987	185015	1029	184491	30	2.47244	trChip_vs_input_peak_5716
scaffold_155	1789052	1789365	314	1789178	39	2.4719	trChip_vs_input_peak_1158
scaffold_243	178506	178804	299	178695	34	2.43731	trChip_vs_input_peak_2209
scaffold_53	103821	104217	397	103905	31	2.43429	trChip_vs_input_peak_4828
scaffold_114	2065837	2066647	811	2065861	28	2.43065	trChip_vs_input_peak_446
scaffold_135	2081763	2082514	752	2082214	28	2.43065	trChip_vs_input_peak_848
scaffold_202	1219731	1220014	284	1219888	28	2.43065	trChip_vs_input_peak_1770
scaffold_327	998774	999107	334	998941	28	2.43065	trChip_vs_input_peak_3198
scaffold_277	635103	635492	390	635358	25	2.42618	trChip_vs_input_peak_2603
scaffold_294	1080047	1080503	457	1080217	25	2.42618	trChip_vs_input_peak_2823
scaffold_339	700845	701222	378	701206	25	2.42618	trChip_vs_input_peak_3300
scaffold_359	612850	613133	284	612946	25	2.42618	trChip_vs_input_peak_3477
scaffold_410	874928	875202	275	875184	25	2.42618	trChip_vs_input_peak_4000
scaffold_47	1490068	1490476	409	1490266	25	2.42618	trChip_vs_input_peak_4413
scaffold_140	102434	102668	235	102465	22	2.42058	trChip_vs_input_peak_925
scaffold_294	1256747	1257061	315	1257023	22	2.42058	trChip_vs_input_peak_2826
scaffold_494	723220	723610	391	723228	22	2.42058	trChip_vs_input_peak_4615
scaffold_56	882626	883025	400	882627	22	2.42058	trChip_vs_input_peak_4977
scaffold_241	943341	943702	362	943700	19	2.41333	trChip_vs_input_peak_2197
scaffold_3	1881221	1881504	284	1881224	19	2.41333	trChip_vs_input_peak_2877
scaffold_618	213807	214053	247	213984	19	2.41333	trChip_vs_input_peak_5296
scaffold_268	649886	650500	615	650272	38	2.4101	trChip_vs_input_peak_2496
scaffold_246	1479139	1479683	545	1479169	32	2.39951	trChip_vs_input_peak_2257
scaffold_36	382450	382749	300	382664	32	2.39951	trChip_vs_input_peak_3483
scaffold_65	3344800	3345263	464	3345014	29	2.39268	trChip_vs_input_peak_5463
scaffold_105	1840308	1840771	464	1840750	26	2.38438	trChip_vs_input_peak_175
scaffold_464	152685	153035	351	152974	26	2.38438	trChip_vs_input_peak_4383
scaffold_538	763161	763405	245	763371	26	2.38438	trChip_vs_input_peak_4868
scaffold_1275	68915	69204	290	69106	23	2.37409	trChip_vs_input_peak_695
scaffold_175	1083259	1083554	296	1083374	23	2.37409	trChip_vs_input_peak_1431
scaffold_925	122746	123055	310	122955	33	2.36768	trChip_vs_input_peak_6588
scaffold_251	76211	76531	321	76214	20	2.36099	trChip_vs_input_peak_2326
scaffold_478	686754	687072	319	687015	20	2.36099	trChip_vs_input_peak_4503
scaffold_12	3075751	3076211	461	3076131	24	2.33287	trChip_vs_input_peak_546

scaffold_155	2041208	2041677	470	2041258	24	2.33287	trChip_vs_input_peak_1165
scaffold_380	723859	724198	340	724043	24	2.33287	trChip_vs_input_peak_3731
scaffold_392	727852	728101	250	727973	24	2.33287	trChip_vs_input_peak_3808
scaffold_356	22918	23502	585	22919	21	2.31534	trChip_vs_input_peak_3457
scaffold_617	341322	341687	366	341664	21	2.31534	trChip_vs_input_peak_5290
scaffold_21	1162189	1162654	466	1162318	32	2.29804	trChip_vs_input_peak_1840
scaffold_117	265116	265353	238	265307	25	2.29607	trChip_vs_input_peak_485
scaffold_21	3650638	3650970	333	3650648	25	2.29607	trChip_vs_input_peak_1848
scaffold_375	52868	53567	700	53416	25	2.29607	trChip_vs_input_peak_3647
scaffold_10	172772	173028	257	173016	22	2.27517	trChip_vs_input_peak_45
scaffold_265	199745	200077	333	199885	22	2.27517	trChip_vs_input_peak_2462
scaffold_43	2284578	2284838	261	2284667	22	2.27517	trChip_vs_input_peak_4168
scaffold_73	818970	819221	252	819104	22	2.27517	trChip_vs_input_peak_5876
scaffold_735	456795	457213	419	457189	22	2.27517	trChip_vs_input_peak_5894
scaffold_96	795345	795581	237	795441	22	2.27517	trChip_vs_input_peak_6666
scaffold_12	5319783	5320593	811	5320426	33	2.27161	trChip_vs_input_peak_562
scaffold_29	4010754	4010988	235	4010932	26	2.26302	trChip_vs_input_peak_2796
scaffold_419	264061	264656	596	264322	26	2.26302	trChip_vs_input_peak_4060
scaffold_99	446371	446906	536	446406	26	2.26302	trChip_vs_input_peak_6729
scaffold_230	489182	489416	235	489331	23	2.23955	trChip_vs_input_peak_2108
scaffold_28	3704444	3704895	452	3704726	23	2.23955	trChip_vs_input_peak_2659
scaffold_431	904846	905237	392	904922	27	2.23317	trChip_vs_input_peak_4182
scaffold_294	1037206	1037526	321	1037523	24	2.20776	trChip_vs_input_peak_2821
scaffold_384	328642	328907	266	328686	28	2.20607	trChip_vs_input_peak_3752
scaffold_100	1462686	1463051	366	1462884	25	2.1792	trChip_vs_input_peak_73
scaffold_241	1640434	1640724	291	1640548	30	2.15876	trChip_vs_input_peak_2204
scaffold_7389	1866	2327	462	2116	267	2.15647	trChip_vs_input_peak_5901
scaffold_1804	24902	25138	237	25090	81	2.15541	trChip_vs_input_peak_1526
scaffold_488	761318	761682	365	761474	27	2.13	trChip_vs_input_peak_4557
scaffold_79	2231144	2231466	323	2231405	27	2.13	trChip_vs_input_peak_6119
scaffold_309	552785	553148	364	552884	29	2.08913	trChip_vs_input_peak_3011
scaffold_470	132764	133132	369	132855	31	2.05462	trChip_vs_input_peak_4426
scaffold_472	150264	150511	248	150335	64	1.95868	trChip_vs_input_peak_4438